ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. LXIII | OAK PARK, ILL., February, 1933 | No. 2

ILLINOIS MEDICAL JOURNAL

Published monthly by the Illinois State Medical Society under the direction of the Publication Committee of the Council.

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Membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Dr. Henry G. Ohls, Managing Editor, 1618 Juneway Terrace, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $3.50 per year for all foreign countries included in the postal union. Canada, $3.25. Single current copies, 50 cents.

Editorials

CONTRAST THE REPORT OF THE COMMISSION ON MEDICAL EDUCATION WITH THE REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

Contrasted with the report of the Committee on the Costs of Medical Care is the report by the Commission on Medical Education organized in 1925 by the Association of American Medical Colleges. Contributions for the support of this commission came from the A.M.A., the Rockefeller Foundation, the Carnegie Corporation, the Josiah Macy, Jr., Foundation, and a number of medical schools. The import of this committee was to study principles and conditions involved in medical education and licensure in furtherance of the desire to correlate medical education with modern progress, and both the advances in university education and the needs of everyday society. However the committee could not do this task without running flatfootedly into some of those very tenets of medical ethics and economics with which the Committee on the Costs of Medical Care has made so insolently and so ignorantly free.

This committee on medical education had representatives from the Association of American Medical Colleges, from the American Medical Association and distinguished lay as well as medical educators and many other prominent medical men. Yet the findings of this committee were distinctly against that socialism that seemed so dear to the heart of Dr. Wilbur's committee. This anti-socialistic committee not only reviewed the medical curriculum, the supply and distribution of physicians, graduate education, licensure, premedical education, domestic and foreign medical education but also the nature of medical practice.

Now this commission does not recommend the taking of medicine and putting it into the hands of sociologists but it does recommend

the putting of a little sociology into the hands of physicians by the inclusion of economics and sociology in the undergraduate physician's curriculum. Not for an instant does this commission of men who know medicine, falter in its declaration that medical practice and all that appertains to it must remain in the hands of the physicians themselves. The biggest idea this commission drives home is that the more important part of the question is the quality of medical care and its efficient distribution rather than the question of the better distribution of the economic burden of illness.

In other words, the *doctors are more concerned in medicine than they are in economics. They are more concerned in making people well and keeping them so than in finding out who is going to pay for the work. Quality of medical care, not quality of financing nor of organization is the doctor's plea for the people!*

The commission insists with equal vehemence that the distribution of doctors is faulty in the United States and that doctors are increasing at too rapid an output and that we have too many doctors already, anyway! These two basic errors the commission says demand immediate rectification.

Other salient points made by this commission are:

"Some maintain that standardized medical service should be made available on a mass-production basis. The unit of practice, however, whatever the type or degree of organization, is the individual patient. It is a fundamental fallacy to base any program upon an assumption that the human being can be, or is likely in the future to be, a uniform standardized organism."

This statement comes from a group of men who have passed in their careers through many different phases of medical interests, so should it not be given far more weight than any attempt to change the nature of medical practice coming from a group representing largely men who have devoted their lives to other interests than the care of the sick?

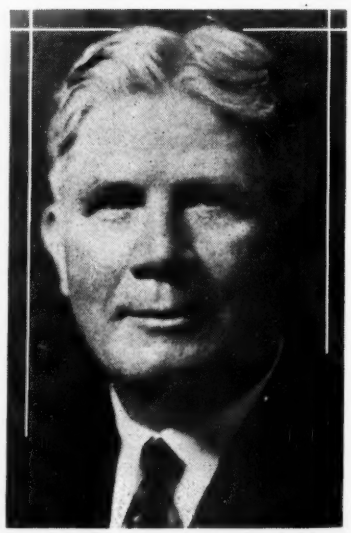
The report of this commission is a challenge to the medical profession, the universities and the medical schools to develop proper leadership in securing a medical profession of the proper quality for the needs of today and of the future.

There is an urgent need, says the report, "for the coordination of the efforts of the various groups and individuals in the field to obviate the inadequacies of isolated and duplicating activities, to secure collective expressions of policy, and an active participation of all in the common undertaking."

"Emphasis must be kept constantly upon the fact that only through a sufficient number of properly trained physicians can a community expect to meet its responsibility for the care and prevention of illness and the protection of health. There is no substitute for this essential feature."

Nor can there be!

THE PASSING OF J. WARREN VAN DERSLICE



Dr. James Warren Van Derslice, past president of the Illinois State Medical Society (1919-20) was a man whose death causes a sharp hiatus in the routine and progress of medical practice and medical economics. During the war Dr. Van Derslice served as captain and later as major in the Medical Corps; he was a member of the House of Delegates of the American Medical Association from 1921 to 1930 and again during the session of 1932. In 1909 he was honorary president of the Sixth International Medical Congress in Budapest,

and in 1920 he was President of the American Association of Medical Milk Commissions. From 1912 to 1918 he was professor of pediatrics in the Illinois Post-Graduate Medical School and from 1893, the year of his graduation from Rush Medical College, until 1916 he was a member of the faculty of his alma mater in the department of pediatrics. His death occurred on Christmas Eve, and so seemed doubly sad. Dr. Van Derslice was only 63 years of age, just approaching the time of his greatest wisdom. He was ill almost five weeks. Death was due to acute diverticulitis, with resulting pylephlebitis and multiple liver abcesses, and a terminal acute purulent peritonitis.

Dr. Van Derslice was born June 26, 1869, at Cheney, Nebraska and came to Chicago in his youth. He specialized in pediatrics. He did post-graduate work in his specialty in London, Berlin and Vienna in 1904 and 1909 and read a paper and presided for a time at the international Medical Congress in the latter year. For several years he has been chairman of the Milk Commission of the Chicago Medical Society and he was president of the Aux Plaines branch in 1915. He was on the attending staffs of the West Suburban and Oak Park Hospitals and was secretary of staff of the former, charter member of the Oak Park Post of the American Legion, of Oak Park Lions and a member of other local organizations.

Dr. Van Derslice's most important scientific achievement was his yoeman work in improving the milk supply for babies. He had a grasp of this problem that made him one of the great men of the country in this task, which brought him in contact with dairymen on the one hand and scientific investigators on the other. His wide acquaintance with medical problems arising in the various legislative bodies he worked in made his advice invaluable.

For organized medicine he was known as one of the wheel horses, his genial personality, rugged outspokenness and absolutely disinterested honesty of purpose made him an outstanding leader.

Funeral services were held December 26 at the Pilgrim Congregational Church, Oak Park. The active pallbearers were Dr. Van Derslice's colleagues in the Aux Plaines branch of the Chicago Medical Society; his associates in the Chicago Medical and Illinois State Medical Societies and the A.M.A. were honorary pallbearers. Members of the Aux Plaines branch formed a guard of honor. The Lions Club and American Legion assisted.

SHOULD THE COMPULSORY PRACTICE OF EUTHANASIA BE THE NEXT LEGISLATIVE AFFLICTION UPON THE MEDICAL PROFESSION?

Advocates of euthanasia affirm that very faith that they deny, through their assumption that man will be better off in the hereafter than he is here, and that it is advantageous to exchange this world's known ills for whatever adventures and afflictions lie beyond the "thousand doors that lead to death."

So at the outset euthanasiasts proclaim themselves as paradoxists. For every prophet in every recorded age, whether pagan or Christian, who has ever foretold the after-life has held inflexibly to the tenet that, *Thou shalt not kill.*

Oriental mystics extend this teaching to the lowest forms of animal life. Even insect life is sacred. Now, while there is a steady invasion into western thought of far eastern thought and religion, even more paradoxically there is found on every side a distinct increase in the belief in euthanasia, whether for oneself or for others.

Some authorities blame this upon the imported influence of older and aging nations but shrewder American minds are quick to state that it is all merely another evidence of our acquired national intolerance to discomfort. The United States was founded and developed through a band of men and women who cheerfully embraced privation and hardship not from any masochistic love of distress and adversity but because of a passion for patience and the ability to choose a goal and to strive for it.

Suffering, trials, misery, wretchedness, poverty and abnegation were regarded by the early colonists as they have always been regarded in the spiritual perspective,—that is as a part of the process of life. The entire Christian religion is based upon the theory that only by the travail of pain, literally "the way of

the Cross," can the mortal cycle be accomplished and the immortal orbit achieved. The same teaching is found in the books of Genesis. Buddha knew it, and it shouts at mankind from the very bricks of Persepolis and the clay of the Chaldees. Oddly enough, man through the ages has advanced almost illimitably in the science and knowledge of mortal matters—he has conquered "the earth and the air and the waters under the earth" but he has not by a single iota approached any nearer the habitat of the soul. He does not know the substance of his essence, he cannot rule it, or destroy it so far as exact knowledge is concerned, nor protect himself from it. Mocking, elusive, taunting as the vagaries of the weather, the soul, the consciousness, the ens or whatever you wish to term it, remains not the conquered of man, but his conqueror.

And there lies the hitch for euthanasia.

There has not been nor is there a physician who ever practiced medicine and there never will be one who has not had, has not or will never have many a case of incurable illness, affliction, deformity, suffering or mutilation in the face of which the way of mercy would seem to lie only through the doors of death.

The trouble is no physician can tell what lies upon the other side. Is "death the little door that leads to light"? If the body ceases to suffer and to ail, what happens to the soul?

Homer, Virgil, Dante—all the great classicists who have written of life and death—incorporate into their works an intense pity for those who have "ceased to dwell upon this earth until their appointed tasks were done."

Yet even in the face of this ignorance of the destination to which the victims or the beneficiaries—as you will—of a coup de grace, are sent, daily recruits to the cause of euthanasia gain amazingly. The trouble is that the ranks of the euthanasiasts are drawn not only from professional men, but from the laity. The thin fine line between euthanasia and murder is already as debatable as the question of abortion, and neither more nor less so. The fly in the ointment is the uncertainty of what comes next.

Eyes of the nation are turning now to the state of Illinois where a mother killed her three children and tried to kill herself because she was too poor to feed and clothe the group.

The unfortunate woman who deserves all the leniency in the world, at this writing is going to trial in the criminal court.

In this case as in most gospels of euthanasia it would seem that desire to relieve the feelings of the living and ease the burdens and the worries and the impossible load that care of the object of the euthanasia demands, had as much to do with the ultimate act as the woes of the victims. In this case the mother had no employment, the children were of the age deemed "troublesome" by any caretaker and discouragement and distress had cankered the poor woman's judicial perspective. Of a similar alignment is the decision of the physician who would give a slight overdose of a lethal medicine to still the heart whose every beat means unbearable suffering to some pitiably stricken human being. A suffering, too, the intensity of which is shared by every member of the family, or if the patient is a public charge, is another addendum to the overburdened taxpayers of a world now gripped by poverty.

Almost a half century ago that morbid yet keenly astute sociologist of Scandanavia, Henrik Ibsen, discussed the problem of euthanasia in his able drama "Ghosts." In that you will remember the heroine, Mrs. Alving, administers a fatal medicine to her syphilitic, semi-imbecile, thoroughly debauched and wanton son who is following the footsteps of his rake of a father and who has already seduced his illegitimate half sister who is in service in the household. In this play the old family physician who has attended the birth of the son, and the birth of the half-sister, to that maid, her mother who had been in service before her, and who had watched Mr. Alving sicken and die from the diseases of his excesses, makes a plea for euthanasia that is all the more virile because of its terseness.

All of Ibsen's plays made society hold its breath. This one in particular caught at the heart and the throat and the fingers of both laity and profession. It was well named "Ghosts."

This Ibseniana was one of the earliest manifestations of the lay public's approval of euthanasia. Right now fresh impetus is being given to the movement. It is all quite in line with the development of those materialistic concepts of life that hold the state supreme,

and the omnipotent arbiter of human rights and duties.

Through this development stark socialism gets a chance at yet another masquerade, and this time, only too often in the mask of eugenics. All of a piece are such legislative pyrotechnics as the suggested euthanasia legislation; and that which makes legal license of love, ease of divorce, encouragement of family limitation, recognition of therapeutic abortion, sterilization of delinquents and dozens of other antisocial and unnatural practices.

The latest to be touted by those who would make the world over by laws alone, is the euthanasia idea.

"On a subject about which there should seemingly be no discussion among a civilized people," says Rev. W. I. Lonergan, S. J., "every day we are hearing more and more talk and the quiet killing of incurable sufferers or of the insane is constantly gaining new defenders. The fact will surprise many but nobody can afford to ignore it.

"The practice of endeavoring to relieve the hopelessly ill by hastening their death is nothing new. What is novel is its growing endorsement by medical men whose great task has always been recognized to be the prevention or cure of disease; by lawyers whose professional attitude has hitherto been to penalize and discountenance suicide and murder; and by non-Catholic clergymen, though Jews and Christians alike have heretofore always assumed that the prohibition on Mount Sinai not to kill extended to self-inflicted death as well as to murdering others."

As "Better Health" remarks ably: "Not only are murder and suicide everyday occurrences throughout the country, but what has been traditionally stigmatized as sinful and criminal is being more frequently condoned and defended. So far as the United States is concerned, euthanasia is, like most of our modern immoralities, a European importation that has come to us without any tariff opposition. Infidel, Communistic and radical statesmen in Germany, Czecho-slovakia, and other countries have for some time been advocating euthanasia legislation, though with only partial sucess."

Less than a year ago a committee of the Illinois Homeopathic Medical Association drafted a resolution urging the legalization of the administration of drugs to put imbeciles and sufferers from incurable diseases painlessly to death. The February *American Journal of Public Health*, 1932, editorializing on euthanasia, sympathetically and with seeming approbation refers to an article that appeared in *Public Health*, November, 1931, which professedly advocated legislation for voluntarily euthanasia and was, *mirabile dictu*, the presidential address of Dr. C. Killick Millard, Medical Officer of Health, Leicester, England, at his installation the previous month.

Court records and press notices in France, England, Denmark, Russia, the United States, and elsewhere, show that men and women who have slain relatives, or physicians who have deliberately hastened the deaths of patients to end their sufferings, have not only been acquitted of murder but even applauded for their conduct.

In a relatively short period seven such killers failed of conviction in France. In Russia, in 1928, a father who had put to death his imbecile child got off with a mere reprimand. In England a man who drowned his sick daughter, a four-year-old tubercular, was freed by a jury, three of them women, on the score that he was actuated by love and sympathy. Only last winter, in Copenhagen, where a woman deliberately overdosed her mother, the judge in the case was reported to have viewed it leniently because it was prompted not by malice but by affection.

It will be recalled that in our own country a practical example of euthanasia was given a few years ago in Chicago and met with a great deal of medical and popular approbation when a physician with the consent of the parents of a child born defective refused to perform an operation that would save the infant's life but leave it an incurable sufferer. In 1925 a Colorado physician, in harmony with euthanasia principles, put his thirty-year-old daughter, a hopeless invalid, to death and at his trial eleven jurors voted his acquittal, the twelfth later saying that he was on the verge of changing his vote when the jury was dismissed. In January of this year a man in Ohio confessed that a year before he had chloroformed his infant son ill with an incurable brain infection and he, too, met with widespread sympathy. A Minnesota banker won the same popular ap-

proval when he shot his deaf-mute daughter, a girl of seventeen, and then turned the weapon on himself."

Dr. Millard's professional position makes interesting his attitude on euthanasia. He details his proposed measures to legalize euthanasia and is even willing to let the victim consult a spiritual advisor, get a blessing and receive a painless death with all the ease with which he might order a fresh suit of clothes. Dr. Millard however, even he, is unable to state whether the victim will be getting from the frying pan into the fire. However Dr. Millard is not original. He gives at the best merely a repetition of Lecky and Westmarck. Nor does Dr. Millard expect to rid the world of imbeciles or mental defectives at a wholesale rate. He is merely willing to permit a voluntary choice for the sufferer from an incurable disease as to a "quick and easy death" or a lingering last illness. As to the myriad of technicalities as to when and why, as to the legalities of it all, as to the perversions of such a law in the hands of quacks and charlatans, Dr. Millard sends no "safety legislation" to rid his proposal of the millions of vexing problems, adjudications and quibbling that must of necessity arise.

In 1929 the question of legalized euthanasia was up before the German Reichstag. The excuse then for administration of the death potion was that it would be the "pinnacle of humaneness," but the majority of the medical profession is of the mind that such a law would be a free-for-all-alibi for all sorts of quackery.

When the question was discussed before the Reichstag, Dr. Hermann Zondek thus protested:

"In my opinion the suggestion does not deserve serious consideration. No matter how extreme the condition may be, no physician should be allowed to give a dying patient a coup de grace, for what physician can claim he is free from a false diagnosis? His function is to heal and to help. But the chief point of my objection to legalizing euthanasia is that the entire medical profession would find itself in an utterly impossible situation if it were legally authorized and permitted to put an end to the life of a dying patient. It would, furthermore, instantly wreck the confidence of the patient in his physician."

As to the English "mercy" killings, Dr. A. A. Brill, the American psychiatrist, remarked: "Cases such as these are establishing dangerous moral and legal precedents for society . . . We should keep this most important law of all, the law of life, clear-cut and free from pernicious sentiment."

Some members of the legal profession are in harmony with the euthanasia movement, but generally lawyers reprobate it. They fear it as a situation likely to result in aiding and abetting murder. One famous American criminal lawyer has noted that the acquittal of those who inflict painless death on incurable sufferers is a perilous precedent that may easily be taken advantage of and an evidence of the increasing danger of "sympathy overbalancing factual judgment" in murder cases.

Dean Inge, distinctly sympathetic toward euthanasia, has gone on record as expressing the hope that should he ever suffer from an incurable disease he would have patience to await the end. In his ethics volume, "The Problem of Right Conduct," published in 1931, Canon Peter Green, an Anglican divine, thus writes:

"Many men every year do commit suicide to escape lingering agony. In such a case I should myself like my physician, in conjunction with a specialist, to be allowed to state that the disease was fatal and likely to be slow and painful; and then I might be permitted to make a sworn declaration that I desired to end my life at once in some painless manner. This would enable a man to settle his affairs; to say goodbye to his friends; and to receive the last rites of the church."

ROCK ISLAND COUNTY MEDICAL SOCIETY MAKES SUGGESTIONS TO ITS STATE SENATOR

The chairman of the committee of the Illinois Commission on Taxation and Expenditures sent the following letter to the president of the Rock Island County Medical Society:

STATE OF ILLINOIS
THE ILLINOIS COMMISSION OF TAXATION AND EXPENDITURES

Moline, Illinois, July 9, 1932.

Dr. Perry H. Wessell, President, Rock Island County Medical Ass'n.,

Dear Doctor Wessell:

As this letterhead indicates, I am chairman

of the State Commission created by law passed by the last General Assembly 1931 which is for the purpose of studying taxation and expenditure thereof.

The aim of this commission after its deliberations, is to make recommendations to the next General Assembly which convenes in January, 1933. We hope to make suggestions which, if enacted into law will reduce the cost of state and local government.

As one interested in this subject, I am asking you if you will submit to me some concrete and practical suggestions on taxation and expenditures, having in mind a reduction of both, that this Commission may study. At the present time, the Commission is studying the question of merging some of the tax levying and tax spending political units of the state and county. We will go into the study of state expenditures from Springfield in a short time.

Any suggestions from you or your organization will be appreciated by the undersigned as well as by the State Commission.

Yours very truly,
(sig)
MARTIN R. CARLSON, Chairman.

In response to Senator Carlson's letter the president of the Rock Island County Medical Society appointed a committee to study the situation and offer suggestions as to how best to remedy the tax burden and reduce government expenditures. The following is the medical society committee report:

ROCK ISLAND COUNTY
MEDICAL SOCIETY COMMITTEE REPORT

Your committee to study methods of reduction in tax levies and expenditures reports with diffidence.

Purely local conditions and suggestions are felt to be of tiny import except when viewed in proper relationship with state and national settings. Your committee, therefore, asks leave to preface its few concrete suggestions with a general statement.

The year 1889 marked a change in governmental practice when, for the first time, a special class of citizens was granted representation in the Federal Executive department. The creation of a Department of Agriculture was followed shortly by the creation of departments of Commerce and Labor, each representing an additional class of citizens equally foreign to any proper business of government theretofore recognized. The function of government is the exercise of those powers and the fulfillment of those duties which protect citizens in their property and family rights and in peaceful pursuits, and also to provide a business office for the transaction of international affairs. Tolerance of all which affects the individual alone, is the essence of good government. In each of these three non-governmental departments there has grown an inconceivably vast array of tax-eating bureaus, whose annual expenditures have become greater than any country ever was able to endure.

Many of these bureaus have bribed state legislatures to levy and spend tax money under bureau supervision, through the expedient of matching state funds with federal funds in equal amounts and for stated purposes. Most of these expenditures violate the Constitution of the United States by usurping powers reserved to the states—except that the state legislatures acting do voluntarily sell their birthright for a mess of pottage. Most of the activities pursued in this manner have little or nothing to do with recognized responsibilities of government.

Since 1921 the lobby strength of bureaus in the three extra-governmental departments has been sufficient to enable much dictation to Congressional committees by an army of tax-fed bureaucrats who hold no executive or legislative office and yet are fed at taxpayers' expense, to the detriment of all concerned.

An example of the tax irresponsibility of the Federal Congress under lobby pressure may be cited in the 1921 change which overtook the Tariff commission. Prior to that time the Congress had functioned under the Constitution as the one and only tax-raising power. In that year, Congress gave to a commission of five men, blanket authority to raise or lower any or all import duties within a margin of 50 per cent. of the figure fixed by Congress: the commission to be appointed by the President and held subject to removal by him. Under this plan the cost of sugar alone to the American consumer may be made to vary, up or down, by as much as $150,000,000 per year, not by the Congress, but by five executive appointees.

So fearful of lobby domination had the Congress become, that, when both houses voted to undo this giving away of their own birthright of revenue raising, in neither house could a two-thirds majority be found to override a presidential veto. Congressmen change with each election while tax-fed bureaus remain and grow to the limit of taxpayers' powers to provide. Within the past ten years bureaucratic growth and greed have progressed so mercilessly that that limit may well be in sight at the moment.

The plight of the states is pathetic in that all have succumbed to bribery and dictation and tax-levying under one or more of the 50-50 bureau aid plans, taxing their citizens to match money extorted from the same citizens to be carried to Washington to be counted and carried back to the states if any be left after the extraction of salaries along the route. In all of these proposals, eleven states pay 95 per cent. of the cost and the remaining states milk them perseveringly.

The medical profession may well take pride in having fought, to a standstill, its share of controversy with tax-eating bureaus. Had business men or dirt farmers done as well in their respective fields, the present unbearable tax situation would not exist. The Illinois Legislature is to be congratulated upon being one of the three which never did succumb to bribery by the Children's bureau of the Department of Labor, during a seven-year onslaught.

As a means of relieving our lawmaking bodies of an almost unbelievably heavy pressure by bureaucratic lobby, your committee offers for consideration two suggestions:

1. That the personnel of State and National Houses of Representatives be reduced by approximately one-half, while the tenure of office be made four years.

2. That members of the National Senate be relieved of the present Direct Primary Law and be selected by vote of state legislature, as formerly was the case.

The setting established, your committee has considered the matter of possible economies in county tax levies and expenditures. We suggest for consideration and diffidently recommend:

1. That numerous elections be combined to be held at one time and place.

2. That county offices be combined when and if feasible. (Coroner; health officer; judgeships.)

3. That salaries of all county officers be fixed by the county Board of Supervisors instead of by the State Legislature as is done in some instances.

4. That county officers and assistants be paid fixed salaries while collected fees be turned over to the general fund.

5. That paupers be fed wholesome food but in less luxurious manner and that responsibility for their care be again centered in the county Board of Supervisors.

6. That pensions be abolished or reduced.

7. That fees of investigators of poor claims be cut and the number of investigators reduced.

8. That county road-building projects for the immediate future be pursued under the gas-sales tax fund in just so far as employment may enable citizens to pay taxes or to pay for support furnished at county expense.

9. That the Rock Island County Board of Supervisors be commended for its careful avoidance of extravagance; and that civic effort of the Rock Island County Committee on Taxation be commended.

In the matter of tax levies: your committee suggests:

1. That a state sales tax be levied to *equalize* reductions in real estate and personal property levies.

2. That inter-city truck license fees be sharply increased and a mileage tax be placed upon such buses and trucks.

3. That no attempt be made at diverting gas-sales tax money from its stated purpose.

Your committee emphasizes a belief that small local economies are of less importance than is the development of tax-consciousness among voters as an antidote for the evil of gratuitous bureau government.

Respectfully submitted,

W. D. Chapman

A. E. Williams

A. T. Leipold

Committee.

THE CREATION OF PHYSICALLY HANDICAPPED CHILDREN'S CLINICS IS IN THE HANDS OF THE COUNTY MEDICAL SOCIETY

The Illinois State Medical Society through the ILLINOIS MEDICAL JOURNAL, and through other channels, has persistently fought all efforts to force State Medicine on the Citizens of Illinois for many years. We have repeatedly emphasized the fact that medical activities in Illinois should be sponsored by medically trained individuals, and that all clinics conducted in Illinois, in order that they may be highly successful, must necessarily be organized and operated under direct County Medical Society supervision. Many clinics held in Illinois for a considerable number of years have been sponsored by Lay Organizations although the actual clinical work has been done by physicians, members of the State Medical Society. No one cares to deny the fact that much good work has been done in many of these clinics, but they would no doubt have been more successful under strictly medical supervision. It is quite obvious that a higher degree of cooperation, a most desirable factor for good, would have been attained if the local County Medical Society had been responsible for the clinics both as to arrangement and operation, and some physician would have assumed responsibility for the after-care suggested for each particular patient.

No one can deny the fact that many times the Medical Profession has been imposed on through many patients being referred to clinics for care, when they are able to pay at least a modest fee for services rendered.

With these basic facts in mind, and after a thorough consideration of the subject over a long period of time, the Council of the Illinois State Medical Society, at its meeting in September, adopted an outline which is suggested for the conduction of Physically Handicapped Children's Clinics by the County Medical Societies. There is nothing at all mandatory in the matter, on the part of the County Society, but if the Component Society desires to organize and conduct its own clinic of this type, and desires any assistance in such organization, the Scientific Service Committee, a sub-committee of the Educational Committee of the Illinois State Medical Society will give all possible aid asked for, in such organization.

The primal unit is always the County Medical Society, the real basic unit of our Medical Organization, and all decisions as to the formation and conduction of clinics, the time, place and method of operation, as well as the selection of clinicians, is a matter to be settled entirely by the local Society. Several County Societies in Illinois, are now organizing their own clinic, to be conducted entirely by their own members, while several others have requested that the Scientific Service Committee aid them in selecting an outside clinician for the actual work.

In adopting this outline schedule form as recommended by the Council, no additional expense is incurred by the Illinois State Medical Society, there are no field workers, organizers, traveling representatives, or other paid executives working at the expense of the Society, but the Society is merely using an office already created which is ever anxious to be in closer communication with all component County Societies, and assist them in every way possible.

It is recommended in the outline that all patients able to do so, should pay a reasonable fee for services rendered, to reduce to the minimum, unnecessary pauperization, although, of course, final decision in this, as well as all other questions relative to the operation of clinics, is a matter to be decided by the County Society itself.

Through the assistance of many organizations desiring to cooperate in this humanitarian work, it is believed that no difficulty should be experienced in the average Illinois community, to solicit funds to take care of the Clinic.

It has been shown repeatedly, that in many of our communities there are physically handicapped children who have not actually been seen by the family physician since delivery, or after postnatal care was discontinued, and many of these cases have been discovered and brought to the Clinics by Welfare Nurses, or other workers, which again shows the value of these cooperative individuals or organizations in the clinical program.

As stated before, all decisions relative to the creation of physically handicapped children's clinics, are in the hands of the County

Medical Societies, and if any additional information is desired relative to any phase of the subject, same will receive prompt attention, by addressing Miss Jean McArthur, Secretary, Educational Committee, Illinois State Medical Society, 185 North Wabash Avenue, Chicago.

WARREN COUNTY MEDICAL SOCIETY
CRIPPLED CHILDREN'S CLINIC

The regular Physically Handicapped Children's Clinic conducted by the Warren County Medical Society was held at the Monmouth Hospital, on January 19, 1933. This clinic established by the Society six years ago, has been gradually increasing in popularity, and has shown conclusively, that County Medical Societies can successfully conduct their own clinics without question. The citizens of the community have not only been intensely interested with its progress, but have given many types of encouragement. The Society has had the cooperation of a group of women who formerly were interested in this type of welfare work, and who are now furnishing the necessary operating expense money,—a highly essential factor. The Press has always been generous in their reports and publicity for each clinic that has been held.

The Hospital authorities give a thorough cooperation, realizing both the community need, and the value of these clinics to the student nurses in training at the institution. Many graduate nurses have visited the clinics regularly, and have been willing to cooperate in every way possible, when called on for some type of assistance. A School nurse and Community Welfare nurse have attended each clinic, and they have played a highly important part in the clinical program. The nurses have visited the home of each patient regularly during the interval between clinics, to be sure that the suggestions for after care have been understood, and actually carried out. When passive motion, massage, or similar measures have been advised, these nurses have given them regularly. They visit the homes likewise, before each clinic to be sure that every patient will be present during the day, and if they have no way of getting to the clinic, arrangements are made for their transportation.

During the clinic, a stenographer is present to take notes from which the records are properly revised and brought up to date subsequently, and as an additional check-up, a dictaphone is also used so there will be no question as to the findings, and prescribed treatment for the case. When x-ray pictures are desired, they are made immediately, and reported to the clinician before the patient leaves the hospital. Most of these bills are paid immediately by the patient, but in the case of those who are unable to pay for this service, the obligation is assumed by the special ladies' committee which is always in attendance.

At the clinic on January 19, a total of forty-one patients were seen; twenty-seven of these had been seen previously and fourteen were new patients at the clinic for the first time. The family physician was present during the day, in nearly every instance, and he received definite information relative to his patient from the clinician.

During the six years this clinic has been in progress, it has been a matter of unusual interest to the physicians in attendance to see the wide range of orthopedic conditions presented for observation, and subsequently, to note the satisfactory progress of nearly every case. Some patients seen at early clinics, when they were carried in the arms of parents, are now seen walking satisfactorily. A number of endocrine disturbances diagnosed one or two years ago show a decided improvement under the prescribed treatment, as is noted particularly on x-ray examination.

An analysis of some of the more interesting cases seen at the clinic on January 19 show,—

1. Knee injuries, three cases, one with no evidence of pathology, and two with bone foreign bodies in knee.

2. Ununited fracture of tibia in girl of 11, operated on at clinic—the operation, a sliding bone graft.

3. Pes planus, two cases.

4. Coxa vara, two cases.

5. Endocrine imbalance, four cases, three showing disturbances in the epiphyses of the head of the femur, and one being a general systemic disturbance.

6. Pott's Disease, two cases, one aged 5, and the other 10.

7. Automobile accident to chest, boy aged 5.

8. Talipes calcaneovalgus, two cases.
9. Talipes equinovarus, two cases.
10. Infantile paralysis eight cases.
a. Both lower limbs.
b. One lower extremity, two cases.
c. One leg and opposite arm.
d. One arm.
e. One leg.
f. Erector spinae muscles, two cases. In one of these, quadratus muscle on one side practically disappeared.
11. Traumatic torticollis, patient 9 years of age.
12. Congential spastic paraplegia, involving entire body.
13. Congenital deformity of the occipital bone.
14. Syphilitic deformities.
15. Scoliosis, two cases.
16. Spastic paralysis, affecting one foot.
17. Congenital absence of four fingers.

This shows the unusual interest in the clinic, and the many types of cases coming before it.

After conducting this clinic for a period of six years, it is quite evident to the members of the Warren County Medical Society, that there are many people in the county who attempt in every way to disguise the fact that one of their children have some structural defect, and it has been largely through the establishment of confidence in the clinic, that many have realized that these unfortunate conditions are not in any way disgraceful, but there is an opportunity in most cases, to give the crippled children an opportunity to enjoy life to a greater degree and, later on, become self supporting.

The clinic established primarily as an experiment has proven itself to be an actual necessity in the community, and we believe that the experience in our own county is no different from that to be found in every other county in Illinois.

It is also the sincere opinion of all physicians who have visited this clinic from time to time, that clinics should be conducted by local Medical Societies, to get greatest benefit for those who need the service, and again that it does not in any way tend to pauperize individuals who are not subjects of charity ordinarily.

HAROLD M. CAMP, M.D.
Monmouth, Illinois.

CIGARETTES HELD TO BE FACTORS IN CANCER, HEART DISEASE AND TUBERCULOSIS

Tuberculosis, heart disease and cancer are fostered at least and possibly actually implanted in the effects of the use of tobacco by both sexes, according to numerous recent research authorities. Especially is this found to be true in regard to women among whom the cigarette habit has grown until it is an actual menace to the nation. Introduced in England after the Egyptian Campaign of 1882, in a few years the fad had been adopted extensively in America though greatly opposed. Anti-cigarette legislation became effective in twelve states but gradually was repealed,—the last repeal that of Kansas in 1927.

Ill effects of tobacco upon the nervous and digestive systems has long been an accepted fact. Especially are women susceptible to nervousness and insomnia and any habit that tends to weaken the nervous system is obviously inimical both health and to that beauty and "style" which in the eyes of the average woman stands paramount to health.

Cancer, tuberculosis and heart disease are all dreaded invaders. Of the three cancer is the most terrible, and while the origin of cancer has never been satisfactorily explained with any scientific exactitude, several recent surveys tend to show that the results of tobacco are often contributory if not actually conducive to this frightful malady.

Cancer of the lungs and cancer of the esophagus are on the increase, evidently emanating in many cases from lesions caused initially by the caustic poisons engendered during the combustion of smoked tobacco.

In a recent critical analysis of cigarette advertising, of cigarettes themselves and of the general effect of cigarette smoking, Dr. Emil Bogen of Cincinnati, O., stresses the evil of those aldehydes similiar to the poisonous compounds in bootleg liquor that must be reckoned with in addition to the tobacco's native nicotine. Cigarette paper is baneful enough but nicotine is worse, and pyredine and furfurol are additional evils. Dr. Bogen discovered that by holding a lighted cigarette in the hand he produced more toxic materials in the air of the room in which he was standing than result from active smoking when smoke is drawn

through tobacco and into the mouth.

Refuting an article on "Tobacco Smoking, a Clinical Study" by Wingate M. Johnson that appeared in the Journal A.M.A. a year or so ago, Dr. S. Adolphus Knopf states

"As a definite clinical observation I desire to state that in the tuberculous patient as well as in the predisposed individuals who follow the advice to stop smoking (not all of them obey it) a diminution of the cough and an improvement in the general condition has almost always been reported.

"That the irregular appetite, absence of taste and the nausea typical of tobacco dyspepsia may be one of the predisposing factors in tuberculosis Dr. Johnson surely would not wish to deny nor that the voluntary undernutrition in the cigarette smoking adolescent girl or young woman is made relatively easy by the anorexia accompanying the tobacco anorexia."

"I only wish here to emphasize again the warning to mothers who smoke cigarettes or whose husband or other member of the family smoke, not to do so in the presence of babies or young children.

"Smoke off the burning end is of more consequence to nonsmokers who breathe it than to smokers who indulge moderately. Smoke from the cigarette's end contains most of the material of the cigarette, and analyses show that this contains a considerable amount of ammonia. This in itself is a good reason why no smoking should be done in the presence of children and invalids."

"In a study of five thousand people who used tobacco to the extent of four cigars or nine cigarettes or nine pipefuls daily or more, Dr. Eugene Lyman Fisk, medical director of the New York Life Extension Institute, found six per cent. of thickened arteries, fifteen per cent. of rapid pulse, fifteen per cent. of decayed teeth, thirteen per cent. gum recession and twenty-seven per cent. of marked pyorrhea. Tobacco is evidently neither a tonic nor an antiseptic for the mucous membrane of the mouth."

(Quoting Henri Vaquez in Schrumpf-Pierron's *Tobacco and Physical Efficiency)* "The consensus of opinion in America among clinicians seems to be that tobacco may produce attacks of pain which simulate true angina pectoris but which cease when the use of tobacco is stopped. Among patients who are suffering from lesions producing true angina there is no question that tobacco increases both the frequency and intensity of the attacks.

"Since the war, the number of cases of hypertension in persons still young has greatly increased. Many of these persons are inveterate cigarette smokers. Trench life enormously encouraged the cigarette habit, and the number of smokers of more than fifty a day has certainly grown enormously.

"It has been found by investigators that in athletics those who smoke are inferior to those who do not smoke, and it is well known that the coaches who train college athletes almost invariably forbid smoking to the members of competing teams.

"In view of numerous other experiments and investigations Dr. M. V. O'Shea comes to the conclusion with which I venture to agree that 'taking a large number of individuals, tobacco will slow down and disturb the intellectual process of the majority of them.'

"Regarding the effect of tobacco on the nervous and digestive systems the fact is well known that its excessive use, particularly in the form of cigarette smoking, often causes serious digestive troubles, headaches, extreme nervousness, neuralgia, vertigo, insomnia and mental depression."

Dr. Hugh S. Cumming says "The cigarette habit indulged in to excess by women tends to cause nervousness and insomnia. If American women generally contract the habit, as reports now indicate they are doing, the entire nation will suffer. The physical tone of the whole nation will be lowered. The number of American women who are smoking cigarettes today is amazing. The habit harms a woman more than it does a man. The woman's nervous system is more highly organized than the man's. The reaction is, therefore, more intense. It may ruin her complexion, causing it to become gradually ashen. Propaganda urging that tobacco be used as a substitute for food is not in the interest of public health, and if practiced widely by young persons will be positively harmful."

It would be interesting to discover exactly

what percentage of our women, especially of girls even below the age of puberty, are already victims of the cigarette habit. Accurate figures would surprise many a parent and set to self-censure hundreds of mothers with whom cigarette smoking is a confirmed habit.

Again in a recent talk to the medical staff at the Ravenswood Hospital Dr. Wm. D. McNally, Associate Professor of Medicine at Rush Medical College, presented other data on the effects of tobacco smoke. Since the introduction of tobacco in England, by Lane in 1586, and its popularization by Raleigh, despite the decrees of churches, fanatics and laws enacted against the smoking of tobacco, the consumption has increased enormously, especially since the world war.

One table offered by Dr. McNally reads:

Year	Number of Cigars	Number of Cigarettes
1905	7,551,510,893	3,673,727,411
1915	7,564,323,265	17,980,164,482
1925	6,910,282,278	82,264,529,154
1926	6,910,956,028	92,110,213,691
1927	6,958,424,350	99,820,463,979
1928	6,788,717,161	108,715,908,654
1929	6,938,413,377	122,402,333,326
1930	6,276,960,398	123,809,553,142
1931	5,656,062,875	114,251,752,920

"In considering the effects of smoking one must think of the chemical action, the mechanical and thermal phases resulting from smoking. All of these are in turn changed for the worse by the disease conditions already present in the mouth and the body," said he.

"The effects of smoking are due in a large measure to absorption in the body of the alkaloid nicotine; as this is an alkaline substance its continual contact with the delicate cells of the lungs causes irritation during the inhalation of smoke. Nicotine, next to caffeine, is the most popular and widely used alkaloid. The everyday uses of both alkaloids are mere habits, not addictions as with the opiates, and the use of either can be discontinued without serious consequences. The nicotine content of tobacco varies; that of pipe tobacco runs from 1.25% to 2.8%; cigars from 0.91% to 1.9%; of cigarettes 0.43% to 3.34%. Both the smoke that is exhaled and the smoke arising from the burning end contain nicotine, as has been demonstrated by Lehmann, in the air of a room in which tobacco was being consumed.

"Webb recognized a cigarette bronchitis in the examination of 3,000 men in the army. Phillippson points to various organic carcinomata which might be produced by nicotine. He places the chemical factor so far above the purely mechanical factor that he prefers to speak of 'nicotine cancer' rather than pipe smoker's cancer.

"With slow intermittent combustion the cigarette yields a small amount of carbon monoxide in the main stream of smoke. In eleven minutes' time the carbon monoxide amounted to 0.26% of the weight of the tobacco and paper burned. With more rapid combustion (five minutes) this amount is increased to 1.30%. Tobacco smoke contains 80 c.c. of carbon monoxide to the gram of tobacco smoked. The mechanical factor in the smoking of cigarettes is not so important as the majority of men and women do not use cigarette holders but smoke the cigarette as it is removed from the package.

"However with cigars or pipes the roughened holder or stem of a pipe would play an important part in the irritation of the lip. The thermal factor above mentioned is much more important in the smoking of cigarettes as the smoke of a cigarette may get as warm as 190°C if smoked rapidly down to the end in a holder. The temperature of the smoke for the first 3.5 ctm. smoked remains around 27.2°C then gradually rises to 52°C if smoked to ½ ctm. of the end.

"The volatile matter varied from 7.9% to 21.12% the average of 33 popular brands being 14.96%. The tarry residue varied 4.84% to 15.29%, the average being 10.41%. The average weight of a cigarette of the 33 brands used in this investigation was 1.0911 grams. According to Hoffman cancer of the esophagus has increased from 1.0 per 100,000 in 1915 to 1.7 in 1922, falling to 1.4 in 1924, rising to 1.8 in 1926 but declining to 1.7 in 1927. Referring to cancer of the lungs, he gives the death rate as 0.7 per 100,000 in 1915, 1.1 in 1920, 1.6 in 1924 with the maximum figure of 1.9 in 1927."

Conclusions, drawn by Dr. McNally included these deductions.

"1. The tar of cigarette smoke contains nicotine, phenolic bodies, pyridine bases and ammonia, irritants which could account for the 'cigarette cough,' the chronic bronchitis of the cigarette smoker, the leukoplakia in

heavy smokers, and the increase of cancer of the lung.

"2. The temperature is not an important factor unless the cigarette is burned down to the last centimeter, when the hot smoke becomes more irritating.

"3. With a tarry residue of 4.94% to 15.29% a definite risk attaches to the smoking of a cigarette, especially since 6.56% to 11.58% may be absorbed or retained in the body.

"4. Cigarettes should not be smoked too short, as the last two centimeters retain most of the tar and other products of incomplete combustion."

According to Schlumm, the symptoms of chronic nicotine poisoning that have received the most attention are tremor of the hands, increased reflex irritability and inclination to tachycardia. Some authorities think that these are of psychic nervous origin, whereas others have noted a slight enlargement of the thyroid and consequently consider the possibility of an influence of nicotine on this organ. In persons who consumed large amounts of tobacco the author nearly always noted damp skin, a tendency to sweating and to diarrhea, and occasionally also glossy eyes, decrease in weight and loss of hair. All these signs are symptomatic of increased action of the thyroid. The blood picture of excessive smokers resembles that of patients with exophthalmic goiter. These observations induced the author also to study the basal metabolism and he found that, of seventy-one persons who consumed excessive amounts of tobacco, fifty-five (more than 77 per cent) had increased metabolism. In those of the smokers who could be induced to abstain from tobacco, the basal metabolism decreased and the nervous symptoms likewise improved. Further, the author studied the specific dynamic action of protein and also the iodine content of the blood. He found the latter to be considerably above the normal. So he reaches the conclusion that the excessive use of tobacco, particularly of cigarettes, has undoubtedly a considerable influence on the thyroid, and he thinks it probable that other incretory organs are likewise influenced. Although so far studies have been made almost exclusively on the suprarenals, some authors have suggested a connection between misuse of tobacco and certain disorders in the sexual apparatus.

Dr. Marion Craig Potter, of Rochester, N. Y., who is decidedly opposed to women smoking, in a recent address expressed regret that young people are burning up their systems with alcohol and nicotine, and pointed out that the thyroid gland, "which more than any other affects vitality, is especially affected by nicotine." To the argument that "our grandmothers smoked," she replies, "Let our grandmothers (!) smoke; they are not potential mothers."

Doctor Potter, who is interested in the "Five and a Fourth Year Plan," approved by the health organizations of the city of Rochester, is continually urging periodic health examinations as a prime means of maintaining good health and discovering incipient disease, and of a tabu on cigarettes.

THE 1933 ANNUAL MEETING

Arrangements are now well under way for the 1933 Annual Meeting of the Illinois State Medical Society, to be held in Peoria on May 16, 17, 18, 1933. The meeting will be held in the new Pere Marquette Hotel, which is one of the best meeting places the Society has ever had available for the purpose. It is planned to have every meeting, both General and Sectional, as well as the scientific and commercial exhibits under one roof. In arranging the meeting, a number of interesting changes have been made, which everyone believes will be for the better.

The General Opening Meeting usually held on Tuesday Evening, has been changed to a very short session to be held at 1:00 P.M., Tuesday, May 16, and this will be followed by the Oration in Medicine, then the regular section meetings will continue the afternoon's program. The Secretaries' Conference will be held at 10:00 A.M. Tuesday. The Veteran's Dinner will be held at 6:15 P.M. Tuesday, and the Annual Dinner of the component Society Secretaries' and the Eye, Ear, Nose and Throat Annual Banquet will be held at the same hour.

Following these dinners, the Peoria Medical Society will be host to the men at a Stag entertainment and reception, with an informal

program of entertainment, which will be different from the usual plan.

All Sections will meet on Wednesday morning until 11:00, when the Oration in Surgery will be given.

The President's address will be delivered at 1:30 P.M. Wednesday, this to be followed by Section meetings for the remainder of the afternoon. Wednesday Evening, the annual President's Dinner will be given, to be followed by the President's Ball, or cards as desired. This makes Wednesday evening entirely for honoring our President.

The regular Sectional programs will continue Thursday morning, until completed.

The two meetings of the House of Delegates will be held on Tuesday afternoon, at 3:00 P.M., and on Thursday morning, at 8:30 A.M.

Joint meetings of the Sections on Medicine and Surgery will be held while the House of Delegates has the two meetings, which will insure a better attendance and more interesting program.

All Section officers are anxious to complete their programs at an early date, and it is desired that all members desiring to present a paper or interesting case reports, should get in touch with the proper officers as early as possible, and submit title, and abstract of paper they desire to present. The list of these section officers is as follows,—

SECTION ON MEDICINE

Walter H. Nadler, M.D., Chairman, 8 S. Michigan Ave., Chicago.

R. F. Herndon, M.D., Secretary, Springfield.

SECTION ON SURGERY

Sumner M. Miller, M.D., Chairman, Peoria.

George W. Post, M.D., Secretary, 4010 W. Madison St., Chicago.

SECTION ON EYE, EAR, NOSE AND THROAT

Frank J. Novak, Jr., M.D., Chairman, 30 N. Michigan Ave., Chicago.

George S. Duntley, M.D., Secretary, Macomb.

SECTION ON PUBLIC HEALTH AND HYGIENE

John W. H. Pollard, M.D., Chairman, 1806 Maple Ave., Evanston.

J. Howard Beard, M.D., Secretary, Urbana.

SECTION ON RADIOLOGY

P. B. Goodwin, M.D., Chairman, Peoria.

Robert A. Arens, M.D., Secretary, 2839 Ellis Avenue, Chicago.

SECRETARIES' CONFERENCE

T. D. Doan, M.D., President, Palmyra.

H. A. Felts, M.D., Vice-President, Marion.

Elizabeth R. Miner, M.D., Secretary, Macomb.

The Peoria Medical Society, the host Society for 1933, is working hard to arrange everything locally, so that everyone attending the meeting will be well cared for.

The golf committees, for men and women, are anxious to know the names of those desiring to play golf on Tuesday morning, and as soon as these are received, full details concerning golf, will be announced. The Ladies' Entertainment Committee will arrange a schedule of entertainment for the visiting ladies, as well as the members of the Woman's Auxiliary, which too, will be announced before the meeting.

Further announcements of interest, in connection with the 1933 Annual Meeting, will be made in THE JOURNAL each month until the meeting is under way.

Any information relative to the arrangements, exhibits, either commercial or scientific, or anything pertaining to the meeting, may be had by writing the Secretary, and same will be submitted at once.

HAROLD M. CAMP, M.D., *Secretary*,
Monmouth, Illinois.

COMMITTEE ON ARRANGEMENTS FOR 1933 ANNUAL MEETING

Committee on Arrangements: C. G. Farnum, General Chairman; H. A. Vonachen, Vice-General Chairman; C. W. Magaret, Secretary-Treasurer.

Officers of the Peoria City Medical Society: J. R. Vonachen, Past President; Hugh E. Cooper, President; A. P. Kannapel, First-Vice President; Geo. Parker, Second-Vice President; C. W. Magaret, Secretary-Treasurer.

Reception Committee: Allan Foster, Chairman; Vice-Chairmen: C. U. Collins, Arthur Sprenger, Geo. Parker, Wm. Cooley, Orville Barbour, C. S. Turner and S. H. Easton. Members: Geo. Zellar, O. B. Will, C. H. Brobst, H. G. Eichhorn, J. C. Roberts, O. J.

Roskoten, J. P. McMahan, W. T. Marrs, H. M. Sedgwick, E. E. Royce and L. E. Monroe.

Entertainment Committee: W. A. Hinckle, Chairman; Baxter Brown, Vice-Chairman; E. Z. Levitin, A. L. Corcoran, F. G. Hopkins, Bernard Heymann and G. C. Lewis.

Registration and Information: W. B. Eicher, Chairman; Vice-Chairmen: J. F. Sloan and Walter Wyatt. Members: C. G. Blake, H. L. Williams, L. V. Boynton, F. L. Stiers, F. Haas, P. F. James and R. L. Eddington.

Committee on President's Dinner: B. S. Adelsberger, Chairman; H. M. Wilson, Vice-Chairman; J. E. McCorvie, R. L. Green, G. W. Washburn, F. S. Davis and T. S. Egan.

Publicity Committee: Leslie Rutherford, Chairman; R. A. Hanna, Vice-Chairman; Wm. Major, E. E. Barbour and Geo. Michell.

Meeting Place Committees: Surgery: S. M. Miller, Chairman; J. E. Bellas, Vice-Chairman; F. G. Morrill, Wm. Roche and J. H. Bacon.

Medicine: Harry Durkin, Chairman; J. W. Sours, Vice-Chairman; W. W. Cutter, A. A. Knapp, Clarence Fischer, T. C. Coggshall and A. J. Foerter.

Eye, Ear, Nose and Thoat Section: Wright C. Williams, Chairman; C. D. Brobst, Vice-Chairman; C. D. Sneller, C. D. Thomas and E. H. Bradley.

Public Health and Hygiene: E. S. Gillespie, Chairman; Wilbur Weinkauff, Vice-Chairman; R. C. Bradley, E. L. Davis and A. B. Barker.

Radiology: P. B. Goodwin, Chairman; H. B. Magee, Vice-Chairman; P. T. Spurck.

Industrial Surgery: S. H. Easton, Chairman; J. E. Meloy, Vice-Chairman; E. C. Burhans, L. C. Ives, G. L. Cohen and H. L. Yoder.

Transportation Committee: C. V. Ward, Chairman; C. P. Strause, Vice-Chairman; J. R. Bierly, W. H. Holbrock, G. R. Seward, B. H. Trewyn, W. L. Bowen and A. J. Blickenstaff.

Exhibits Committee—Commercial: H. L. Pintler, Chairman; M. T. Easton, Vice-Chairman; Sandor Horwitz, C. E. Scullin, S. A. Smith and D. D. Kirby.

Scientific: M. P. Bohrod, Chairman; F. H. Decker, Vice-Chairman; M. Pollok, F. M. Meixner, A. H. Cohen and J. M. McCuskey.

Ladies Entertainment Committee—From the Society: Margaret B. Meloy, Chairman; Ethel Cooper, Vice-Chairman; Esther H. Stone, Helen C. Coyle and Lucia H. Lucy.

From the Ladies: Mrs. J. R. Vonachen, Chairman; Mrs. W. C. Williams, Vice-Chairman; Mrs. H. E. Cooper, Vice-Chairman; Mrs. Arthur Sprenger, Mrs. W. A. Malcolm, Mrs. C. G. Farnum, Mrs. R. L. Green, Mrs. H. A. Vonachan, Mrs. C. D. Sneller, Mrs. R. A. Hanna, Mrs. C. E. Sibilsky, Mrs. C. U. Collins, Mrs. Allan Foster, Mrs. Geo. Michell, Mrs. J. E. McCorvie, Mrs. C. W. Magaret, Mrs. J. F. Duane, Mrs. F. G. Morrill, Mrs. H. A. Durkin, Mrs. C. S. Turner, Mrs. Clarence Fischer, Mrs. S. M. Miller, Mrs. W. L. Bowen, Miss Mary Knapp, Mrs. George Parker, Mrs. B. S. Adelsberger and Mrs. M. T. Easton.

Alumni and Fraternity Reunion Committee: R. M. Sutton, Chairman; J. A. Eastman, Vice-Chairman; L. A. Burhans, J. T. Weed, W. A. Borin and A. G. Ekonomou.

Golf Committee: J. T. Jenkins, Chairman; J. F. Duane, Vice-Chairman; L. M. Coffey and H. F. Diller.

Ladies Golf Committee: Mrs. W. W. Cutter, Chairman; Mrs. J. A. Bellas, Vice-Chairman and Mrs. H. M. Wilson.

Veterans Service Advisory Committee: E. A. Garrett, Chairman; E. E. Nystrom, Vice-Chairman; G. H. Stacy, A. E. Hubbard and T. W. Floyd.

Special Entertainment Committee: W. A. Michael, Chairman; E. P. Burt, Vice-Chairman; R. W. King, F. A. Causey, P. A. Cusack, A. D. Phillips, Elmer Seaburg, F. E. Hammitt, and C. E. Sibilsky.

Hotel Committee: W. A. Malcolm, Chairman; E. C. Kelly, Vice-Chairman; Wm. Blender, A. S. Plummer, F. H. Maurer, J. B. Jennings, W. A. Gott, K. N. Petri, P. R. McGrath, Geo. Borin, P. F. Jones, Thos. R. Plumer, Jos. Sparks and Jerry S. Bell.

WHY HE TALKED SO MUCH

A man got a set of store teeth. He went to a dentist and said, "What can be the matter? Ever since I got these teeth I can't keep from talking." The dentist looked at them and he asked him where he got them, and he said he got them from a mail order house. "No wonder—you got a woman's set of false teeth."

DOCTORS DESIRING TO PRESENT PAPERS BEFORE THE 1933 MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY TAKE NOTICE

SECTION ON PUBLIC HEALTH AND HYGIENE

All physicians desiring to prepare and read papers before the section on public health and hygiene of the Illinois State Medical Society to be held in Peoria in May should communicate with the chairman of the section John W. H. Pollard, Evanston, or the secretary, J. Howard Beard, Urbana.

SECTION ON RADIOLOGY

Doctors wishing to present papers before this section kindly communicate with the chairman, P. B. Goodwin, Peoria, or the secretary, Robert A. Arens, 2839 Ellis Ave., Chicago.

SECTION ON MEDICINE

Doctors wishing to present papers before the section on medicine communicate with the chairman, Walter H. Nadler, 8 So. Michigan Blvd., Chicago, or the secretary, R. F. Herndon, Springfield.

SECTION ON SURGERY

Doctors wishing to present papers before the surgical section will please apply to the chairman, Sumner Miller, Peoria, or the secretary, George W. Post, 4010 W. Madison St., Chicago.

SECTION ON EYE, EAR, NOSE & THROAT

Doctors wishing to present papers before the Eye, Ear, Nose & Throat section kindly communicate immediately with the chairman, Frank Novak, Jr., 30 No. Michigan Blvd., Chicago, or the secretary, G. S. Duntley, Macomb.

SECRETARY'S CONFERENCE

Any member wishing to present a paper at the secretary's conference communicate immediately with the President, T. D. Doan, Palmyra, or the secretary, Elizabeth R. Miner, Macomb.

EXHIBITS AT THE ANNUAL MEETING

The Illinois State Medical Society has never before had better facilities available for both commercial and scientific exhibits, than are available for the 1933 Annual Meeting. They will be shown on the lobby floor of the Pere Marquette Hotel, Peoria, but will be separated from the general lobby, so there will be no interference whatever.

All ethical prospective exhibitors who have not received the diagram and application for exhibit space, may receive same by addressing the Secretary of the Society.

We expect to have many interesting scientific exhibits at the meeting, and members of the Society who would like to prepare an interesting scientific exhibit, should also address the Secretary at an early date, telling the nature of the exhibit, and the amount of space desired for same.

Ethical hospitals desiring to prepare interesting exhibits, may also make such application, if they desire to have an exhibit at the meeting. Several interesting hospital exhibits appeared at the 1932 Annual Meeting, and these were very popular with the many visitors present. Complete information concerning exhibits may be procured promptly by writing Dr. Harold M. Camp, Secretary, Monmouth, Illinois, and all requests for space will be submitted to the special Council Advisory Committee, for action.

ALL CLINICS IN ORDER TO BE SUCCESSFUL MUST BE UNDER MEDICAL SUPERVISION

CRIPPLED CHILDREN'S CLINICS

The Illinois State Medical Society has on several occasions gone on record as disfavoring all clinics within our State which are not conducted directly under the supervision of the local component Society, realizing that all clinics, to be successful must be under medical supervision, both as to arrangement and operation.

Five years ago, the Scientific Service Committee at the request of the Warren County Medical Society, arranged to send Dr. Philip H. Kreuscher to Monmouth to conduct a Crippled Children's Clinic. The clinic was held at the Monmouth Hospital. Some 15 years ago a Warren County Crippled Children's Association was formed, and a sum of about $1,500.00 was readily procured. Soon after this time, Dr. East of Springfield began to conduct clinics in various parts of the State, and a portion of this fund was used to transport crippled children to the East Clinics, and to procure the necessary braces for the youngsters, as prescribed by Dr. East. Dr. East always had an

expert brace maker with him, on his clinical tour, who measured the children for braces, and they were purchased through him. Those in charge of the Warren County Crippled Children soon discovered that the real clinician was the brace maker, and also on a check up, discovered that the braces cost approximately twice as much as they would cost when made by others. Following this discovery, the nurse in charge of the children from Warren County, on each clinic, took the children to the brace maker, and not to Dr. East, who seemingly, was not an Orthopedic surgeon, although many children referred to the clinic were referred to a hospital in Springfield, where Dr. East was a salaried employee.

At the Monmouth Clinics, arrangements were made by the Warren County Medical Society with Dr. Kreuscher, and with the Hospital, which always welcomes the event, as an educational feature for the nurses in training. The ladies who have controlled the activities of the old Warren County Crippled Children's Association aid in getting the children to the clinic. Two welfare nurses, one employed by the county, and the other by the Welfare Association, attend the clinics and on the day following each clinic, call at every home of a cripple to be sure the family understands what the clinician desires, in the way of follow-up service, and also reports the same to the family physician. Some cases are operated on by Dr. Kreuscher at the clinic, and a small fee is paid for service by the Crippled Children's Association who still have some funds for the purpose.

Adequate records are kept of all cases. A stenographer is supplied to take in shorthand all of Dr. Kreuscher's remarks, and results of the examinations. These are carefully proofed by a physician and four copies are made. One copy of each record remains in the hospital, one copy is given to the nurses, one goes to the family physician, and one copy is kept by the Warren County Medical Society. Each family is visited regularly by the nurses, to note the progress, and urge them to see the physician regularly, to get the necessary follow-up service. Records of all cases are continuous, being added to, at each clinic, and a reliable record of the progress of each case from the beginning of the clinics is at hand.

The Illinois Elks Association is conducting crippled children's clinics throughout the state. Who gets the credit for the work accomplished? The Elks. Each lodge is assessed a per capita tax of fifty cents per member to help finance the work. Each lodge is urged to conduct charity balls, festivals, carnivals, or any other method to get funds, for the Elks do not propose to furnish money for all work, theirs being spent largely for administration purposes. The state is divided into districts, with one clinician in charge of the district. All arrangements for clinics must be made through the Elks Association. Copies of records of all cases must be sent in to headquarters, following the clinic. The clinicians, all members of the Illinois State Medical Society, do the actual work, and receive only necessary traveling expenses for their work. Following a number of meetings attended by officers of the Illinois Elks Association, and the Educational Committee of the Illinois State Medical Society, an agreement was made whereby all clinics conducted by the Elks Association should be held under absolute supervision of the component Medical Society, but this has not been done in many cases. They make the arrangements, the clinician does the work, and the Elks Association takes all credit for what is accomplished.

The Monmouth Elks Lodge has refused to pay their per capita tax because the Elks will not appoint Dr. Kreuscher as a special clinician. They cannot send in their own clinician, as he would receive no cooperation on the part of the local society members. During the past year, the local Elks fund accumulated, was used for paying the necessary expenses of Dr. Kreuscher, and other clinic expenses. A small fee has been paid for operations, the application of casts, etc. The chairman of the Crippled Children's Committee of the Lodge, is a physician who believes that all clinics must be under absolute Medical Supervision,—another member, a physician, is also a state officer of the Elks, and he has similar ideas. Together, they have sold their idea to the officers of Monmouth Lodge of Elks, and no attention is paid to the frequent appeals for the per capita tax.

PROPOSED PLAN

Any County Medical Society in Illinois can sponsor, arrange, and conduct their own Crippled Children's Clinics. Funds can be procured in the community by drives, such as are

being made by Elks lodges in the community. They can have the clinician of their choice, arrangements to be made by the Scientific Service Committee of the Illinois State Medical Society. The clinician can be paid moderate fees for surgical operations, and all expenses incurred. Proper publicity can be easily procured, through the assistance of the Educational Committee. Clinical records do not get into the hands of anyone not legally and morally entitled to the same. By an educational campaign in each community, sentiment favoring this type of clinic can be easily procured. Clinics should and must be conducted by Medically trained individuals, follow up service given by the same, and other organizations can cooperate by assisting in the raising of funds, getting patients to and from the clinic, and possibly in the giving of the necessary surgical treatment of the patients seen at the clinics. According to the Bulletin issued by the Illinois Elks Association, the sum of $17,000.00 was spent last year for the clinical program, and a check up will no doubt show that the major portion of the money was spent for administrative purposes, leaving the actual investment to the local communities, thus putting the financial burdens on them, without giving them a voice in the arrangements, or the selection of the clinician.

"SOCIALIZATION OF MEDICINE IS A STEP TOWARDS THE SOCIALIZATION OF INDUSTRY," SAYS MERLE THORPE, EDITOR OF "NATION'S BUSINESS"

When it comes to a matter of costs, percentages, profit and loss, business men are fond of saying that only business men are expert judges of leaks and losses. So a quotation from Merle Thorpe, editor of "Nation's Business" should have a lot of weight with the business end of "The Committee on the Costs of Medical Care" to say nothing of the laity that has come to think it knows more about medicine than the doctors themselves. Certain it is the profession can for once applaud a "business man's comment" on the economics of the medical profession.

Writes Mr. Thorpe:

DEEPER INTO SOCIALISM

It is a thankless task to criticize the labors of the Committee on the Cost of Medical Care, headed by Secretary-Doctor Wilbur, of the Department of the Interior.

The descent into paternalism, and from paternalism into socialism is easy—and doubly easy when the way is greased by sentiment, by the desire to better the health of the community, by sympathy for suffering, by the knowledge that costs of medical care fall with crushing effect on the overalled and white-collared poor.

The committee would have medical service provided largely by "organized groups," an extension of the already increasing method of practice through clinics.

How pay for this group service?

Here's part of the committee's recommendations:

1. Voluntary co-operative health insurance, in which organized groups of consumers unite *in paying into a common fund agreed annual* sums, in weekly or monthly installments. . . .

2. Required health insurance for low-income groups. . . .

3. Aid by local governments for health insurance. *Part of the people, because of their* low income, cannot pay, even on a periodic basis, the full cost of complete service in cases where the community relies for the provision of medical service primarily upon the purchase by its people of voluntary health insurance. Such communities may well use tax funds to the extent necessary to supplement the payments of those low-income families. When health insurance is required by law, it may also be necessary and desirable that a contribution be made from government funds.

The socialism of medicine is but a step toward the socialization of industry.

To tax A to pay B's doctor's bill is an appealing plan particularly when we put it on the ground of conserving public health.

But why not then tax A to pay B's food bill since it is nutrition that is essential to health?

It is comforting to know that the doctors themselves are in revolt at the Wilbur report.

A new treatment for enuresis, Sponge Cake T. I. D.

AUXILIARY NEWS

Dr. John R. Neal, President of the Illinois State Medical Society and Chairman of the Legislative Committee, informs us that the Bill for the Prevention of Blindness, about which Miss Audrey Haydn has talked to us on various occasions, is now before the State Legislature. Our State Auxiliary Program Committee has recently sent to each County Auxiliary printed material regarding this subject. Won't each one of you study this subject sufficiently to be able to discuss it intelligently and to answer questions regarding it?

It is further stated by Dr. Neal that "there is no appropriation connected with this bill in that the State has for many years supplied nitrate of silver ampules, and the cost is small and the increased demand will not be great. This is taken care of in the regular budget of the Health Department, and there is no specific appropriation being asked for in this bill. Anyone attacking it from that angle is in error."

The above mentioned bill is known as House Bill No. 161. Write your legislators immediately advocating the bill, and refute the charge that it will carry an appropriation, also ask your friends and neighbors to aid with this humanitarian measure.

Let me remind you that our State Convention is to be held in Peoria, Illinois, May 16, 17, and 18, 1933, to be followed by our National Convention in Milwaukee, Wisconsin, June 12-16, 1933.

Begin now to arrange to attend both these conventions which may be reached by motor in a few hours from any part of the state. You may gain much information and stimulus from these conventions, and if you have never attended one join your friends there and learn what excellent entertainment is provided.

Your Publicity Chairman again begs each individual, particularly State or County Committee Chairmen and Officers, to keep her informed regarding activities so that she may publish the news regularly.

MRS. F. P. HAMMOND,
Publicity Chairman.

Einstein thinks space is just matter in another form. This is the most charitable explanation of the human head yet suggested.—*Brooklyn Times.*

EDUCATIONAL COMMITTEE

January Activities

SPEAKERS' BUREAU

50—Health talks were given before lay groups in Illinois under the auspices of the Educational Committee. The following organizations used the Speakers' Bureau: Women's Clubs, Women's University Clubs, Young Mothers' Clubs, Parent Education Classes, Child Study Groups, Boys Clubs, Parent-Teacher Associations, Y. M. C. A. Lyceum Course, Pre-Medical and Pre-Dental Club of Y. M. C. A. College, Legislative Chairmen of the Illinois Federation of Women's Clubs, Church Societies and Kiwanis Clubs.

These health talks were given by the following members of the Illinois State Medical Society: Doctors Don Deal, Springfield; F. R. Towner, Elgin; Mabel Howe Otis, Moline; M. D. McNeil, Highland Park; J. H. Roth, Kankakee; Harriet M. Daniel Graves, Murphysboro; Mary G. Schroeder, Elgin; John R. Neal, Springfield; Harriet Day Chandler, Decatur; Charles B. Zipf, Freeport; Donald Killinger, Joliet; J. J. McIntosh, Mt. Carmel; R. E. Gordon, El Paso; and from Chicago, Doctors L. J. Weber, Julius Hess, G. Henry Mundt, Arthur J. Cramp, Bertha VanHoosen, Roger W. Hubbard, W. A. Newman Dorland, W. W. Bauer, A. C. Ivy, Cyril Hale, Emmet Keating, J. R. Ballinger, Reinhold Schlueter, Alice Conklin, Edward N. Schoolman, Maximilian Kern, Lena K. Sadler, Joseph Greengard, Gilbert P. Pond, Herbert Rattner, M. P. Borovsky, F. O. Fredrickson, I. Trieger, Arno B. Luckhardt.

The talks were highly satisfactory as indicated by the reports sent in from the above organizations.

SCIENTIFIC SERVICE:

19—Scientific programs were given for county medical societies. The following members of the Illinois State Medical Society whose names are listed with the Scientific Service Committee were called upon by County Medical Society program chairmen:

Vermilion County—Edward J. Stieglitz—"Arterial Hypertension and the Logic of Its Treatment."

Perry County—Frank Deneen—"Colon Disturbances and Their Treatment."

LaSalle County—Philip Kreuscher—"Fractures of the Major Joints."

LaSalle County—Harold M. Camp—"Some Modern Medical Problems."

Lake County—Benjamin Goldberg—"The Recent Developments in Clinical Tuberculosis."

McLean County—M. J. Hubeny—"Spondylolisthesis in Acute Infections."

Will-Grundy County—Clement L. Martin—"Ano-Rectal Diseases; Practical Considerations in Their Treatment."

Paris Hospital Staff—Harold O. Jones—"Obstetrics"—films.

Will Grundy County—Lena K. Sadler.

Belmont Hospital Staff—W. A. Newman Dorland—"The Origin of Ovarian Tumors."

Warren County—Leo Campbell—"Medical Aspects of Diabetes Mellitus."

Warren County—Harry A. Oberhelman—"Surgical Aspects of Diabetes Mellitus."

Warren County—Philip Kreuscher—"Crippled Children's Clinic."

Decatur Medical Society—Francis L. Lederer—"Modern Concepts in the Diagnosis and Treatment of Sinus Conditions."

Will-Grundy County—Joseph K. Calvin—"Some Aspects of Kidney Diseases in Children."

Pike County—Herman H. Cole—"Streptococcus Empyema."

Pike County—Walter Bain—"Diagnosis and Treatment of the Thymus."

Pike County—Don Deal—"Non-Surgical Abdominal Pains."

DeWitt County—James G. Carr—"Treatment of Jaundice."

RADIO:

52—Radio talks were prepared and given by members of the Illinois State Medical Society as follows:

Louis P. River—Hernia.

Joseph Welfeld—Enuresis.

Edward H. Ochsner—Chicago as a Medical Center.

R. W. Kerwin—Nasal Catarrh.

Ben H. Huggins—Chronic Arthritis.

Charles A. Siler—Common Fallacies.

M. T. Strikol—Painless Surgery.

Frank Wojniak—Obstructions of Nasal Breathing.

H. Hoyt Cox—Why Grow Old.

Alex Hershfield—Newspaper Moron.

James Lebensohn—Mysteries of Vision.

Herbert E. Schmitz—Is Cancer Curable?

Berent Hendrickson—Scarlet Fever.

Harry W. Fink—Does It Hurt?

Richard J. Gordon—Convalescent Care.

Charles L. Bidwell—The First Six Weeks of Motherhood.

Charles H. Miller—The Use and Abuse of Medicines.

James T. Gregory—Appendicitis.

Henry H. Conley—Complications of the so-called Head Cold.

Elmer A. Vorisek—The Cross-Eyed Child.

S. L. Governale—The Disabled Gall Bladder.

George Edwin Baxter—Who Is Boss in Your House?

Abraham Levinson—Why Babies Cry.

H. W. Elghammer—The Nervous Child.

Robert O. Ritter—Common Deformities of Childhood.

George F. Munns—Colic in Infancy.

The other talks were given in cooperation with the Chicago Pediatric Society.

PRESS SERVICE:

The following health educational articles were written and approved by the Committee for release over the signature of county medical societies:

Is Cancer Curable
Why Cough
Nasal Breathing
Does It Hurt
Safety for Children
First Six Weeks of Motherhood
Felon
Complications of Cold in the Head
Some Causes of Hoarseness
Nasal Catarrh
Fatigue
Hygienic Adjustment in Middle Age
Development of the Normal Baby
Heart Leakage
Trichinosis

766—Releases were sent to Illinois newspapers:

491—Regular Press Service.

27—Monthly Service.

33—Cold Articles to Home Advisers of the State.

100—Newspapers, re meeting DeWitt County Medical Society.

34—Newspapers, re meeting Pike County Medical Society.

57—Newspapers—re meeting Warren County Medical Society.

3—Newspapers of Grundy County, material on measles.

4—Newspapers of Union County, material on influenza.

13—Community newspapers of Chicago, Branch meetings.

4—Chicago Association of Commerce, re meetings Chicago Medical Society.

MISCELLANEOUS:

35—Package libraries compiled for members of the Society.

Special material secured on the Report of the Committee on the Costs of Medical Care.

Notices sent to physicians of meetings in Franklin County, Perry County, LaSalle County.

Letters and material for study mimeographed for the Woman's Auxiliary.

Cards mimeographed for meeting of the Woman's Auxiliary, Chicago Medical Society.

Special material on the work of the Committee furnished the State Medical Society of Pennsylvania; Toronto, Canada; Walla Walla, Washington; Manitou, Colorado; two counties of Iowa.

Cooperation given women's clubs and Parent-Teacher Associations.

Moving picture films secured for county medical society and for lay meetings.

Lists of Handicapped children sent to secretaries of all Illinois county medical societies.

Secured cooperation of Chicago Pediatric Society in revising "Diet Lists" used by the Child Hygiene Division of the State Department of Public Health.

Assistance given in diphtheria immunization campaign at Elmhurst.

Secretary invited to become Vice-Chairman of the Public Health Committee of the Woman's City Club of Chicago.

Jean McArthur, Secretary

Only the home can found a state.—Joseph Cook.

DON'T FORGET YOUR INCOME TAX RETURNS

Physicians are reminded to file their Federal Income Tax without delay; they must be filed not later than March 15. The Journal A. M. A. January 14, 1933, gives a summary of the revised law, and discusses the allowable deductions as follows:

THE PHYSICIAN'S INCOME TAX—1933

The taxpayer who is required to make a return must do so on or before March 15, unless an extension of time for filing the return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must contain a full recital of the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on individual citizens or residents of the United States, under the Revenue Act of 1932, is 4 per cent on the first $4,000 of net income in excess of the exemptions and credits, and 8 per cent on the remainder.

WHO MUST FILE RETURNS

1. Returns must be filed by every person having a *gross* income of $5,000 or more, regardless of the amount of his net income or his marital status. If the aggregate gross income of husband and wife, living together, was $5,000 or more, they must file a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

2. If *gross* income was less than $5,000, returns must be filed (*a*) by every unmarried person, and by every person married but not living with husband or wife, whose *net* income was $1,000 or more, and (*b*) by every married person, living with husband or wife, whose *net* income was $2,500 or more. If the aggregate net income of husband and wife, living together, was $2,500 or more, each may make a return or the two may unite in a joint return.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changes during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment a fractional part of a month should be disregarded unless it amounts to more than half a month, in which case it is considered as a month.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain one from the local collector of internal revenue.

The following discussion covers matters relating specifically to the physician. Full information concerning questions of general interest may be obtained from the official return blank or from the collectors of internal revenue.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year from professional work, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation, and as compensation and profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year, as stated before. These matters are fully covered in the instructions on the tax return blanks.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The following statement shows what such deductible expenses are and how they are to be computed:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment, "the useful life of which is short," may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of more or less permanent value. It may ultimately be used up, deteriorate or become obsolete, but it is not in the or-

dinary sense of the word "consumed in the using"; rather, it wears out.

Payments for equipment or nonexpendable property for professional use cannot be deducted. As property of this class may be named automobiles, office furniture, medical, surgical and laboratory equipment of permanent value, and instruments and appliances constituting a part of the physician's professional outfit and to be used over a considerable period of time. Books of more or less permanent value are regarded as equipment, and the purchase price is therefore not deductible.

Although payments for equipment or nonexpendable articles cannot be deducted, yet from year to year there may be charged off against them reasonable amounts as depreciation. The amounts so charged off should be sufficient only to cover the lessened value of such property through obsolescence, ordinary wear and tear, or accidental injury. If improvement to offset obsolescence and wear and tear or injury has been made, and deduction for the cost claimed elsewhere in the return, claim should not be made for depreciation.

A hard and fast rule cannot be laid down as to the amount deductible each year as depreciation. Everything depends on the nature and extent of the property and on the use to which it is put. Five per cent a year has been suggested as a fair amount for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. The proper allowance for depreciation of any property is that amount which should be set aside for the tax year in accordance with a reasonably consistent plan, not necessarily at a uniform rate, whereby the aggregate of the amounts so set aside, plus the salvage value, will at the end of the useful life of the property in the business equal the purchase price of the property or, if purchased before March, 1913, its estimated value as of that date or its original cost, whichever may be the greater. The physician must in good faith use his best judgment and make such allowance for depreciation as the facts justify. Physicians who, from year to year, claim deductions for depreciation on nonexpendable property will do well to make annual inventories, as of January 1, each year.

Medical Dues.—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

Traveling Expenses.—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

AUTOMOBILES

Payment for an automobile is a payment for permanent equipment, and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, etc.

Deductible loss through depreciation is the actual diminution in value resulting from obsolescence and use, and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is the possession of the present taxpayer.

If the automobile is used for professional and also for personal purposes—as when used by the physician for recreation, or used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire, etc.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repairs and the cost of repair claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Expense in Defending Malpractice Suits.—Expenses incurred in the defense of a suit for malpractice are deductible as business expenses.

Sale of Spectacles.—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

MEETING OF THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The American Board of Obstetrics and Gynecology proposes to hold the first of a series of annual dinners for Diplomates of the Board and their friends on the first day of the Scientific Session of the American Medical Association meeting in Milwaukee, at which time the successful candidates from the examination of the day before will be introduced in person, one or more addresses will be made by officers of the Board and a Round Table Conference and general discussion of the activities of the Board will follow. Diplomats expecting to be in attendance at the Scientific Session of the American Medical Association are urged to make reservation for this subscription dinner as early as possible through the office of the Secretary of this Board. Further announcements will be made through the Journal of the American Medical Association and the American Journal of Obstetrics and Gynecology.

The next written examination and review of case histories will be held in cities throughout this country and Canada, where there are Diplomats who may be empowered to conduct the examination, on April 1, 1933.

The next general, clinical examination is to be held in Milwaukee on Tuesday, June 13, 1933, immediately preceding the annual session of the American Medical Association. Reduced railroad rates will apply.

For further information and application blanks, address the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

BLAME THE SECRETARY

Contributed by E. A. S.

If your Lodge is on the bum,
Blame the Secretary;
If your members will not come
Blame the Secretary;
Don't take hold and do your part,
Don't help give the thing a start,
Show them all that you are smart—
Blame the Secretary.

If the programs are a frost,
Blame the Secretary;
Don't help put the thing across,
Blame the Secretary;
If the eats aren't what you like,
Threaten to go out on a strike.
Don't help—for the love of Mike—
Blame the Secretary.

When you get a bill for dues,
Blame the Secretary;
When you're asked to help, refuse,
Blame the Secretary;
Why should he be seeking aid?
For you know he is well paid!
That is why his job is made—
Blame the Secretary.

Original Articles

WHEN THE CAUSE OF HEART DISEASE IS OBSCURE*

EMMET KEATING, M. D.
CHICAGO

Pathological changes in the human body, associated with heart disease, can always be demonstrated by a careful history, physical examination and laboratory aids. An examination of this kind will usually reveal the primary cause of heart disease. However, we see many patients where these measures have been faithfully carried out and the primary cause is not found. When patients present themselves with sore throat, persistent cough or a urethral discharge, the cause is our chief concern. In these conditions prompt and intensive measures are instituted to discover the cause. In the case of heart disease the cause plays the chief role, but its discovery is often difficult and not always energetically sought.

There is no question as to the importance of finding the cause in the case of heart disease, but a great amount of time and expense is sometimes involved in discovering it. The public is not convinced of the necessity of incurring the expense, and usually deserts the physicians who urge a procedure of this kind and seeks the advice of those whose abbreviated methods more nearly conform to the patient's ideas of what is sufficient in the way of an examination.

The practice of "See your dentist twice a year" is not inspired by a desire to preserve health, but is prompted by two ever present urges of the human race—vanity and the knowledge that an aching tooth will interfere with the taking of food.

The public does not know that the foundation of beauty is good health. If that fact were thoroughly understood the doctors' offices would be as well and frequently patronized as are the beauty shops.

The majority of people who have never suffered any pronounced physical distress, pride themselves on their record of never having consulted a doctor. It often happens that when these people reach the age of 45 to 50 years,

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*Read before Section on Medicine, Illinois State Medical Society, Springfield, May 18, 1932.

they suddenly find themselves tiring easily and becoming dyspneic on very slight exertion. These patients give no history of ever having been, even comfortably, ill.

Had these unfortunate people been examined twice a year from the time they were children, and a carefully written record preserved, conditions of major importance, but of seemingly small consequence to them, would have been discovered and ameliorated or cured. The incidence of rheumatic heart disease and syphilis; their presence known to the physician, would receive not only immediate attention, but the patient would be instructed and guided in his mode of living. In the case of rheumatic heart disease, his threshold of endurance would be established and understood by himself, while recurrence of uncured syphilis would receive necessary, timely and periodic treatment.

The causes of heart disease are—

1. Rheumatism
2. Syphilis
3. Focal infections
4. Trauma
5. Congenital defects

To discover the major cause of the relatively sudden breakdown of the middle aged patient, is in many cases a most difficult problem. Physical examination of these patients reveals a condition of myocardial degeneration, ranging from moderate impairment to irreparable injury. The amount of kidney involvement is often found to be in proportion to the damage suffered by the heart.

It is not always easy to find a single pathological entity of sufficient magnitude to account for the patient's condition. The most painstaking and diligently made physical examination will not reveal it. Multiple laboratory tests, *the determining of the basal* metabolic rate, the electrocardiogram, and the *x-ray picture of the chest provide graphic* pictures and permanent records corroborating the physical findings of departures from the normal. These aids frequently show evidence of disease not discovered by the physical examination. Such tests are very necessary parts of the patient's record, but often are of small help in arriving at a correct conclusion as to the original reason for the damage to the heart.

The careful physical examination, the laboratory tests and the mechanical devices used in the study of the patient's body make known the presence of certain definite and unmistakable pathological conditions but do not reveal the primary cause of the unexpected breakdown. When confronted with this situation, a diagnosis of endocarditis, myocarditis or cardio-renal disease is of limited value in determining the therapeutic requirements and is of small benefit to the patient as a starting point for restoring him to health.

The recognition of various pathological conditions affecting the patient, makes it possible to form a fairly accurate opinion as to the prognosis; but when the satisfaction of having made a comprehensive diagnosis adds nothing to our knowledge of the fundamental cause and is of no help to the unfortunate patient, we are aroused to the necessity of undertaking further study of the problem. The information that has been obtained by careful clinical and laboratory study of the patient, at the expense of so much time and effort, is of paramount importance to the advancement of our knowledge of heart disease and adds something to the comfort of the patient. For these reasons alone all patients should have the benefit of this type of examination.

If the heart and kidney impairment is mild in character, a carefully arranged program looking to the correction of various disturbing factors, can be carried out in so leisurely a manner that the patient, with greatly diminished resistance, is not placed in jeopardy by *the institution of measures that must be neither* too aggressive or enthusiastic in character.

When the damage has progressed to the point where a few days rest in bed fails to produce marked or even noticeable improvement, the *treatment to be undertaken becomes a most* baffling question. We find ourselves confronted *by a multitude of small and sometimes major* serious disturbances, no one of which it would seem reasonable to suppose could be responsible for so grave a condition of the heart.

With no history of the patient having suffered *from any of the diseases so common to child*hood, from rheumatism or the venereal diseases, our attention is turned to the study of whatever focal infections the patient may harbor. Clinicians do not seem to be much nearer an agreement as to the role that focal infec-

tions play in causing heart disease than they were when the claims and proofs of the part played by focal infections were submitted to the medical profession several years ago.

White[1] gives the impression that aside from syphilitic infection of the nose, other disturbances of the nose, or inflammatory conditions of the sinuses, are not to be regarded seriously as contributory causes of heart disease. He has the same opinion of infections of the teeth, gums and ears. He thinks the tonsils should receive careful attention because of their connection with rheumatism. This opinion is shared by other text-book writers of recent years.

Opposing these views, is the work of Jones and Newsom,[2] who, for the purpose of studying the effect of focal infections of the teeth upon the heart, made some very careful experiments by filling the pulp cavities of dogs' teeth with streptococci cultures.

"Dental abscesses were demonstrated in all inoculated dogs. The hearts of inoculated dogs constantly showed very small vegetative or verrucose mitral and (or) aortic endocarditic lesions, patchy parenchymatous degeneration, nuclear changes, increase in the diameter of the muscle cell and a slight round cell infiltration. A positive relationship between experimentally produced focal dental infecton and cardiac hypertrophy as measured by diameters of muscle cells was noted."

The partial or entire correction of focal infections is not rewarded by the complete disappearance of established pathology. Many times the symptoms of heart involvement persist. However, this well established fact is not an argument for the relinquishment of vigorous and sustained efforts on the part of physicians to establish an approach to a normal hygiene of the nose, middle ear and accessory sinuses, and the prompt removal of infected tonsils. The constant bombardment of an already damaged heart by the toxines of even small and seemingly unimportant foci of infection are certain to add a burden that it is illy prepared to withstand. With rheumatism, the infectious diseases that affect children, toxic goiter of short duration, congenital defects and trauma ruled out, we turn hopefully to syphilis only to have those hopes dampened by the laboratory report of negative blood and spinal Wassermann tests. I use the term hope advisedly, for in the desperate cases, syphilis is the only injurious agency that is amenable to treatment. To illustrate the difficulties of arriving at correct diagnosis of primary causes, I submit a synopsis of the history, physical examination and laboratory findings of a patient.

Mr. C. H., American, aged 50 years, married, insurance solicitor, complains of dyspnea on slight exertion, gastric distress with nausea, loss of weight and weakness, loss of appetite and sleep. He felt well until four months previously, when the above symptoms appeared and steadily progressed in severity. Exertion such as dressing and shaving causes dyspnea. His loss of weight was 20 pounds. He consulted a physician who made a diagnosis, confirmed by the electrocardiogram, of auricular fibrillation, and was given large doses of digitalis, with no arrest of the fibrillation and no improvement.

Aside from some gastric disturbance, the patient had no diseases during his childhood. Nor until four months previously, with the exception of a gonorrheal infection, did he suffer any subsequent illness.

His father died, age 78; his mother, aged 65, cause of death unknown. No family history of tuberculosis, carcinoma or diabetes.

The patient has been married twice. First wife bore three children who are living and well. Patient was divorced. Second wife bore him three children, living and well. She had one miscarriage which he thinks was the second pregnancy. He was a moderate smoker and a moderate drinker. He was successfully engaged for several years in a business that failed. He then become an insurance solicitor.

Physical Examination.

A well developed, white male, presenting an appearance of extreme pallor. His body is free from lemon tint and bronzing.

His hair, scant, and was gray at the age of 35. His expression, anxious. Although there is no nasal obstruction he breathes through the mouth. The pupils react fairly promptly to accommodation and sluggishly to light. Following the use of a mydriatic, examination of the eyegrounds reveals no pathology. Both ear drums show evidence of chronic otitis media. There is no tremor or deviation to right or left of the protruded tongue. The under surface of the tongue presents many petechiae. Patient has two removable bridges. The remaining teeth, with the exception of three or four in the lower jaw, are in bad condition. The pharyngeal reflex is fairly active. The tonsils are small and ragged. There are no undue visible pulsations in the neck and no palpable lymphatic glands. Thyroid is moderately enlarged, firm and freely movable. Examination of the lungs reveals no pathology other than the congestion resulting from a crippled heart.

Heart: Apex beat is palpable fifth interspace 4⅝ inches to left of mid-sternal line. Heart dullness is noted 6 inches to left of mid-sternal line. No thrills. There is a systolic murmur at the apex transmitted to the tricuspid area, upward along the left border of the sternum and to the left as far as the posterior

axillary line. The first sound at the apex is slightly accentuated. Also the first sound at the tricuspid area. The tones are fairly clear. There is no tenderness over any part of the abdomen. Increased rigidity over the upper third of the right rectus muscle. The liver is felt at the costal margin. Kidneys not palpable.

Varicose veins in the scrotum are noted. The prostate is small, smooth, moderately firm and not tender. Rectum shows no pathology on digital examination. There is no edema of arms or hands or clubbing of the fingers. No edema or varicose veins of legs or feet. Abdominal reflex is very active, cremasteric and patellar reflexes present. Tendo Achillis reflex elicited in left leg. Co-ordination is good. There is a coarse tremor of the extended fingers. No Romberg. No ataxia. No Babinski. No ankle clonus.

Laboratory Findings: Urine: specific gravity 1030; albumin 1 plus; sugar, negative; amorphous urates; many granular and hyalin casts, many pus cells, few blood cells and abundant mucous shreds.

Blood: Hemoglobin 85%; RBC, 4,980,000; WBC, 13,400; small lymphocytes 26; large mononuclears 1; polymorphonuclears 72; eosinophiles 1; non-protein nitrogen 70 mgr. per 100 cc blood. Blood and spinal Wassermann negative. Basal metabolic rate, plus 60. Electrocardiogram shows evidence of myocarditis and auricular fibrillation. Ventricular rate 160.

Radiograph showed hypertrophy of the heart.

Diagnosis—Toxic goiter. Chronic endocarditis. Chronic myocarditis. Auricular fibrillation. Parenchymatous nephritis. Chronic tonsillitis. Chronic otitis media. Chronic gingivitis. Varicocele.

The diagnosis of these several conditions is well established but the primary cause of the heart condition remains a matter of conjecture. The myocardial changes as shown by the physical examination, electrocardiogram and x-ray are not the result of a toxic goiter of short duration. The patient gives no history of rheumatism, and while grave myocardial changes do follow an insignificant sore throat, we cannot claim with certainty that this is a case of rheumatic heart disease.

Both blood and spinal Wassermann reactions for this patient were negative. Rest in bed and symptomatic treatment has been of no avail. It is well to remember that syphilis frequently gives rise to thyroid disturbance, that deceives the physician and as a result the goiter is too often treated surgically. We cannot institute effective treatment if we do not know the primary cause of the patient's heart disease. For this sudden and early decline in a healthy man between the age of 49 and 50, we cannot fall back upon the diagnosis of general arteriosclerosis. An intelligent and hitherto active man is rapidly approaching death. We must admit our inability to prevent this, but we should not condone our helplessness. What can be done to strengthen our efforts to discover primary causes in these cases? In addition to what has been already accomplished, there are three things, the first two entirely possible, the third hedged about by seemingly unsurmountable difficulties.

1. The periodic physical examination of all people from birth until death.

2. Careful and renewed study of the histories, physical findings and laboratory reports of our patients in whom the primary cause of heart disease is indisputably established. By a painstaking comparison of these details with the details of the findings in patients where the primary cause is obscure, we will, in an increasing number of cases, be able to correctly diagnose the original cause of heart disease.

3. The greatest aid, the autopsy, which should include careful studies of joint structures, is seldom available. In America we are handicapped by not being able to obtain autopsies on the bodies of private patients. County officers, in their fear of giving offense, have gone so far as to permit the relatives of patients dying in county hospitals to refuse permission to post the bodies. While sentiment plays a large part in the scarcity of autopsies on private patients, it is not the main factor. Medical society discussions of how to obtain autopsies are frequent, but efforts to change public opinion are feeble. Make a desirable thing profitable and its popularity is assured. The great deterrent to the performing of autopsies on the bodies of private patients is lack of money with which to pay competent pathologists. It is not fair to put this financial burden upon the physician. It is too much to expect the family of the deceased to pay this charge and they seldom do, unless legal entanglements are expected. To popularize the doing of post mortems and to make them a matter of course; all physicians should insist that when death closes the chapter, their bodies should be autopsied and the results published in the public press. The medical profession might take steps to persuade laymen to contribute endowment funds for this purpose. If the money for doing post mortems were available, sentimental antagonism would quickly

vanish. Pathology would become an attractive field to a larger number of medical men and that science would thereby be materially advanced.

The works of man — bridges, railroads, cathedrals and other structures, given regular and constant inspection and service, are kept in operation for generations and centuries. For himself, man has accepted the dictum that his days are "few and full of trouble" and sees not the necessity of having himself regularly inspected and repaired.

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DISCUSSION

Dr. Frank Deneen, Bloomington: No doubt, as Dr. Keating pointed out, the physical examination repeatedly done from early childhood would probably uncover many of the obscure causes of heart trouble.

It seems as though in the past fifteen to twenty years we have changed materially upon our ideas of the frequency of the different causes of heart trouble. Fifteen years ago, of course, the most frequent thing was the so-called rheumatic group, which included scarlet fever. Then came syphilis and cardiorenal hypertension, and lastly thyroid. Today there is also a group that seems to be increasing and apparently greatly increasing. That is the type of myocardial failure with the production of a right-sided hydrothorax that goes on progressively in the course of a few months down to the death of the patient.

Apparently there is no solution for that type of death, and yet we are seeing more of those cases right along. They do not respond to treatment in any respect.

The scarlet fever type should diminish if the work being done at present with the use of our scarlet fever antitoxin proves valuable during a period of a severe scarlet fever epidemic.

We must look things squarely in the face though in regard to the thyroid. We have dealt much with the heart hyperthyroidism and all of its branches. As a result, we have had a great number of increased operations and out of that you must, of necessity, get a large per cent of hypothyroid cases. The hypothyroid condition does bother the heart. This condition responds rapidly to treatment. We must face this. It is becoming an increasing problem. It is going to increase as long as it is necessary to do thyroidectomies and also due to the fact that we are still in a period when probably more thyroidectomies are being done than are necessary.

When you have a heart for which you cannot determine the cause and the Wassermann is negative and there is a weakened lower pulse pressure, with some irregularity of pressure, and your electrocardiogram is relatively negative, it is going to be a good plan to start that patient on a syphilitic treatment on general principles and not wait to establish the definite cause; and you will be surprised at the number of these patients who will have a marked improvement.

The coronary type, of course, still remains unsolved and unknown; and we are undoubtedly interested in that type from a selfish standpoint on account of the great increase in the number of doctors who are "going out" with coronary disease.

I believe that we still have two great problems, one the progressive myocardial insufficiency, if you want to call it that, and the coronary type. I have no suggestions to make as to how that problem can be solved.

Dr. Emmet Keating (closing discussion): The prognosis for these patients is bad. In this case, despite the negative blood and spinal Wassermann, the patient was given anti-luetic treatment which was ineffective. The surgeon who referred the case did not think a thyroidectomy advisable, because of the poor condition of the patient.

INTERNAL OCULAR HEMORRHAGE*

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The purpose of this paper is to show the relationship between the clinical and the pathological pictures resulting from hemorrhage of the ocular vessels.

For a structure composed mostly of transparent avascular media the eye is richly supplied with blood vessels and even a small lesion may decrease vision, which is the function of the eye, to a serious degree.

Anatomically there are several points of interest. The retinal vessels are end arteries which do not anastomose, except occasionally with ciliary branches at the disk. This collateral twig found in 17%, explains why part of the retina may function when an embolus has lodged in the central artery of the retina. The retina is developed embryologically from neural ectoderm and its blood supply is derived intracranially from the internal carotid. Hence we see arterioles and capillaries with the ophthalmoscope, magnified 15-16 times lying in a transparent structure and similar to the vessels of the central nervous system. Blood pressure measurements are interesting but they do not convey information for diagnosis and prognosis comparable to that derived from the direct observation of the fundus.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, at Springfield, May 18, 1932.

A practical point arises directly from the type of the retinal artery. When an embolus has lodged in this vessel immediate massage may force the obstruction into one of the smaller branches. I have recently seen a patient who suddenly, after massage, recovered good vision in a partial embolism of the upper temporal branch some 10 days after the onset of blurred vision.

Immediate paracentesis also may restore good vision in an eye blind from embolism of the retinal artery by lowering the tension of the eye and causing a dilation of the vessels so that the embolus may be forced on into a branch.

Physiologically it is of interest that the secretion of the intraocular fluid admits agglutinins and precipitins to the interior of the eye while hemolysins are barred.

Hemorrhages reduce vision by:

1. Interfering with the transparency of the media.
2. Displacing the percipient rods and cones.
3. Blocking the escape of the intraocular fluid.
4. Displacing the conductive mechanism of the eye.
5. Obstructing the non-supported dura of the optic nerve.

Following trauma or operation more or less severe accumulation of blood is seen in the anterior chamber. The red blood cells tend to settle to the lower part and are removed via the filtration angle; at times a greenish staining of the cornea may occur which clears slowly from the periphery. Hemorrhage into the vitreous is generally arterial as the internal limiting membrane restricts venous hemorrhages which are of the subhyaloid type. Vision is greatly reduced and the red reflex may be abolished. Following gross hemorrhages there is a tendency for secondary glaucoma and hence atropin should not be used, mioties are likely to cause severe pain and iridectomy is contraindicated, on account of the possibility of further severe hemorrhage. When not great in amount the red blood cells are slowly removed, but connective tissue may invade the vitreous by way of the rupture and produce retinitis proliferans, or the degenerated products may be seen as bright cholesterin containing masses in synchysis scintillans in spite of which normal vision is possible.

Preretinal or subhyaloid hemorrhages are usually venous in origin. The red blood cells tend to sink to the lower part and the blood serum rises so that in the course of a few days a definite border is seen. When they occur in the macular region the vision is greatly reduced.

Hemorrhage into the retina results from over 18 different conditions. The structure of the retina fixes their type and we are able to distinguish the bright red flame-shaped hemorrhages that have a ragged border, on account of the difficulty the red blood cells find in spreading against the direction of the axis cylinders of the fibro-vascular layer of the retina. Many of these must be of capillary origin and at times it is difficult to distinguish between dilated capillaries and fine fibro-vascular hemorrhages. When they occur into the deeper layers they are punctate and darker in type. It is surprising how severe they may be and how widely scattered over a fundus with little decrease in vision; on the other hand, small macular hemorrhages may reduce vision to hand movements. They may be absorbed completely and leave no trace, or fine crystals, or bright white areas may be found scattered about the retina as in the so-called retinitis circinata. Usually in this condition fresh hemorrhages are to be seen.

Sclerosis of retinal vessels. We, as ophthalmologists, should I think occasionally pause for a stocktaking. Ours is usually considered a limited specialty and in recent years the electric ophthalmoscope has placed in the hands of neurologists, internists and the student the means of easy access to valuable information and no one would wish it otherwise as it helps to overcome the gaps in our knowledge. It is hardly possible for us to know sufficient medicine, and co-operation will result in more accurate diagnosis and what is of primary importance to the patient, sure prognosis.

We should not be led astray by the all too frequent reiteration of high sounding terms. Careful observation faithfully recorded is necessary. It is so much easier to place a diagnosis such as arteriosclerotic retinitis, than to say that there is a high reflex to the artery, engorged veins, right angle crossings, with increase here of connective tissue to obliterate

the view of the vein, etc. In the first place the retinitis term is wrong, it is rather a degenerative process than an inflammation. Thus we add to the shaky superstructure. Again we speak of an arterial hemorrhage. Frequently I am sure these are from precapillary arterioles or capillaries themselves. With a magnification of 15 times we are able to see capillaries as you who use the Biomicroscope are well aware. Also the deep retinal hemorrhages must be from capillaries, as these vessels alone are present in the deeper retinal layers. Benign, essential and malignant hypertension are ponderous terms but should be used with discretion. Time will confirm or disprove our diagnosis.

Foster Moore, Gunn, Coates, and in this country De Schweinitz, Lancaster, Keith and Wagener and others have attempted to place our knowledge of retinal vessels on a better but by no means solid foundation.

The red reflex of the fundus is derived from reflected light, due to the intense blood supply of the choroid altered by the pigmented epithelium of the retina. When exudates collect in the retina or between the rods and cones and the pigmented epithelium, then the red reflex is absent in these areas and the light is directly reflected by these accumulations. The spectacular type of fundus, splashed with great blobs of white exudate may look very different when seen in microscopic section. The large patches of white or grey coloured exudate correspond to accumulations in the subretinal area where the retina is grossly detached so as to interfere with the reflection of light from the choroid. According to their location finer areas of exudate present a white reflex when superficial, or grey appearance when deep.

105 eyes, or about 25%, in a series of 424 showed recent hemorrhages; of these 4.2% had intraretinal hemorrhages, while 10% had subchoroidal hemorrhages, and less than 1% had massive subchoroidal hemorrhage following cataract extraction.

The high percentage of choroidal hemorrhages seems important and especially so as only one-half gave a history of recent trauma other than operative procedures.

Optic neuritis. The optic neuritis group (so-called) show a clinical picture without definite ophthalmoscopic differentiations. Swelling of the nerve head is so frequently associated with hemorrhagic exudates and swelling of the surrounding retina, that the fundus picture alone, only gives a clue to further methods of examination that must be completed in conjunction with the internist or neurologist.

1. The hydrodynamic group, including papilledema due to brain tumor, hydrocephaly, or oxycephaly or orbital tumors, is not an inflammatory process but due to the obstruction of the outflow through the central vein of the optic nerve. It is not necessary here to recall the appearance of this condition and the diagnosis of brain tumor. Cushing says, "that of all the organs of the body, with the possible exception of the uterus, the brain appears to be the most frequent seat of neoplastic disease." Other observers place the uterus, breast, gastrointestinal tract and brain in order of their susceptibility to neoplastic disease. Papilledema is present in 75% of intracranial tumors. 90% of papilledema is caused by intracranial tumors. While 77% (Cushing) show abnormality in the visual fields. The ophthalmologist sees these cases first and when the classic symptoms of papilledema, headache and vomiting occur, it usually means that the case is too advanced for successful surgical intervention.

2. Inflammatory optic neuritis; a papillitis occurs in descending acute meningitis and it may occur in orbital cellulitis without invasion of the meninges about the optic nerve. It is probably very rare in disease of the accessory nasal sinuses but it does occur in chronic tuberculosis and in syphilis.

3. The metabolic disorders are important producers of retinal exudates and hemorrhage. A urine and possibly a blood chemical examination is necessary in every case showing retinal hemorrhages or exudate. I have sections to show these conditions and will not delay here.

4. Hyperpiesis or hypertension cases may show papilledema, exudate, and hemorrhages. The vessels themselves give a clue. When severe and of the malignant type, life is in danger and the patient usually dies in less than two years.

Such diverse conditions as Leber's hereditary retrobulbar neuritis, drug poisoning with arsenic, lead and alcohol, certain menstrual and lactation disorders, or traumatic conditions such as commotio retinae, lightning and electric

shock should be borne in mind as causing edema and hemorrhage and exudates into the retina. Orbital tumor may also, by interfering with the central retinal vein, produce a similar picture.

Thrombosis of the central vein, a branch or even a macular twig are causes of multiple retinal hemorrhages. Most of the cases with complete obstruction of all branches progress, in about two years, to absolute glaucoma. A mydriatic must not be used when extensive hemorrhage has occurred intraocularly and when glaucoma does supervene a miotic will cause severe pain. Operative procedure is fraught with dangers owing to the liability of severe hemorrhage.

Single branch thrombosis interferes with the vision markedly when a temporal branch is involved and to a lesser degree when a nasal branch is affected. The macular twig of the temporal branch may be involved alone and fair vision is maintained.

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DISCUSSION

Dr. George F. Suker, Chicago: It is unfortunate that the attendance is so limited this year, but a paper of this character is worthy of all the discussion the time will permit. Relative to the vessels of the eye-ball, I am quite sure that they are no different than any other vessels in other parts of the body with this modification that the central retinal vessel is an end-artery. They are subject to the same laws physiologically and pathologically as are the other vessels. Lymphatic vessels are absent in the eye ball and are only found in the episcleral tissues.

It is my belief that a thrombosis is preceded by an endophlebitis and should be treated accordingly. I recently had the good fortune to see such a case and follow it through the stages of a mural thrombus and later develop a complete thrombus with the classical picture of such a case. Relative to minute hemorrhages in the retina, these macular or flame shaped types, I am inclined to think they are not due to rupture of the vessels, but due to wide dilatation of the capillaries. We do know that such dilatation can be produced experimentally which will permit the escape of not only serum but red and white corpuscles.

Dr. MacDonald's diagrammatic picture of the position and torsion of the central retinal vein in papilledema is very interesting and new to me. It represents a theory that is distinctly attractive to the edema of the nerve-head controversy. I think we are indebted to Dr. MacDonald for coming so far to give us this very interesting paper.

Dr. Alexander E. MacDonald, Toronto, Ont. (closing): Before such a scientific body it is hard to tie oneself down to a discussion of the types of hemorrhage. Outside the laboratory it is very difficult to settle these disputes. I hope to have the opportunity to show Dr. Suker some of the specimens I have, and I am very glad that he discussed this paper. I am inclined to believe that he looks on it too much from the laboratory side. I need a dozen or so more years of clinical experience. I think it is important to co-relate these findings.

The last diagram I showed on the screen was my own drawing. I disagree with Leslie Paton and some other observers who say the hemorrhage from the subarachnoid space breaks through the cribriform plate and passes into the eye. As you can see there is no break at the cribriform plate. The pressure is outside, the pressure of arterial blood, and damming back due to obstruction, causes the hemorrhage.

I wish to thank both the gentlemen who discussed this paper.

RECENT DEVELOPMENTS IN THE TREATMENT OF CHOREA MINOR*

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Medical literature abounds with numerous methods for the treatment of chorea minor in children, all highly praised by their advocates. Since chorea is recognized as a more or less self-limited disease, a certain amount of scepticism accompanies any claim of cure. The fact that such numerous modes of therapy have been advanced and tried in this disease also serves to indicate that no one form of treatment has become of sufficient success that its general use is warranted in each case. Mere mention of such multiple forms of therapy as sodium salicylate, arsphenamine, bromides, magnesium sulphate, thyroid extract, luminal, chloretone, milk injections, and the use of the ketogenic diet serves to bring out the non-acceptance by the profession of any rational and undisputable method to be carried out in the treatment of cases of chorea minor.

However, in recent years, particularly in continental Europe and the British Isles, numerous favorable reports have appeared in the literature concerning the use of nirvanol or phenylethylhydantoin as the mode of therapy which seemed to be producing the best results in chorea. It was my privilege to attend the meeting of the British Pediatrical Association at Buxton in 1929, at which time Schlesinger reported favorably on the use of nirvanol in chorea, and advised its further investigation and usage.

*Read before Section on Medicine, Illinois Medical Society, at Springfield, May 19, 1932.

It was my opportunity to make clinical observations on eleven cases treated in the East London Hospital for Children in 1929 with the use of nirvanol which have been reported; and subsequently, I have used the drug in five cases in private practice. In all of these cases, the end results were favorable enough to warrant, in my mind, a greater acceptance and use of this form of therapy as being the type of treatment which will probably produce the best results, of any known form of therapy existent today, particularly in severe cases of chorea minor.

The articles appearing in the English and American medical journals on the use of nirvanol are not numerous. Most of the work in this country has been done by Ray and Cunningham[1] at the strong Memorial Hospital in New York in 1930; by Pilcher and Gerstenberger[2] of Cleveland, also published in 1930; and by Marick[3] of Pittsburgh, published in 1931. However, the German literature contains extensive reports on the use of this drug. It was first introduced in Germany in 1918 as a sedative and general hypnotic, and was first used in the treatment of chorea minor in 1919 by F. Roeder[4] who gave the drug to a seven-year-old child developing the resultant "nirvanol sickness" after seven days administration of the drug, followed by a rapid diminution of the chorea. In subsequent years, several articles have appeared in British journals by Poynton and Schlesinger,[5] Ashby,[5] and myself[5] dealing with the use of nirvanol in chorea, while far more numerous accounts occupy the German literature.

Nirvanol or phenylethylhydantoin is peculiar in that it is one of the few drugs in medicine which when given over a consecutive period of days will produce a syndrome which is clinically evidenced by a rash, fever, and increased pulse rate, appearing usually about seven to fourteen days after continuous administration of the drug. Nirvanol belongs to the barbituric acid group, and its chemical formula is closely allied to luminal, having one more CO group than luminal.

To produce the "nirvanol sickness" of Pfoundler, the drug is given orally in tablet form, a dosage of 0.3 gram per day to a child of three to fourteen years, and continued daily until the appearance of an exanthem or enanthem or both. With the appearance of the exanthem or enanthem, or in rare cases in which these phenomena are not present but only a pulse rise occurs, the drug is stopped. Two to four days before the onset of the fever and rash, drowsiness may be noticed, while some observers have stated that an aggravation of the choreic manifestations may occur at this time, before the development of the reaction. In my own cases, the drowsiness was a rather consistent premonitory manifestation of the approaching "nirvanol sickness." During the administration of the drug, it seems best to keep the patient at bed rest in view of some of the unpleasant manifestations which may occur and which will be mentioned subsequently.

With such points in mind, it is necessary to be on the lookout for early evidences of an effect from the drug as shown by the appearance of fever, rash, or pulse rise, any one of which necessitates a stopping of the drug. In not every case does this triad appear; but in my cases, all showed one of the three mentioned indications of a reaction, or if none of these, at least a blood eosinophilia, which of itself may rarely be the only evidence from a clinical standpoint of a reaction having occurred other than the improvement in choreic symptoms. The rash is ofttimes the first sign of a reaction. Occasionally it is so faint a careful search is necessary. Usually it appears first on the trunk, on the extensor surfaces of the forearms, and on the buttocks. In most cases, it will become generalized and involve the palms and soles of the feet. It is most often morbilliform in character, and remains discrete, but sometimes becomes confluent on the elbows and knees. Urticarial and scarlatiniform types are known, but in my experience, I have only seen one rash other than morbilliform in type. The face seems to escape the eruption, but ofttimes shows slight edema and a circumoral pallor. Accompanying the rash in most cases, as previously mentioned, there is a rise in temperature to 102 to 104 degrees with an accompanying rise in the pulse rate. Usually, the rash and fever subside in three or four days. Cases may remain afebrile during the course, and yet develop a marked rash as occurred in two of my cases; or they may have no rash but have a fever; or they may show neither a rash nor fever. Most observers obtain a general reaction as evidenced by temperature, rash, and pulse rise in about three-

fourths of their cases. In general, it may be said that the fever seems proportional to the extent of the rash.

As regards the period of the administration of the drug, if no signs of reaction ensue within fourteen days, de Rudder[6] feels that it is useless to administer the drug for a longer period. However, in three of my cases receiving the standard dosage of 0.3 gram per day, it was necessary for the drug to be administered for fifteen, seventeen, and twenty-two days respectively before signs of "nirvanol sickness" appeared. It must be said here that it is probably unwise to administer the drug longer than fourteen days unless the child is in the hospital, or where it can be carefully watched for any untoward symptoms and reactions. (Although I have never observed such, they have been reported.) Following the diminution of symptoms and signs of the "nirvanol reaction" or during it, a diminution in the choreic manifestations is noticed. This may be almost dramatic in its suddenness, but in most cases, the improvement tends to occur within the first week or ten days. Many of these patients lose their coarse, purposeless body movements, but may retain the finer movements, that is, tremor of the hands, for several weeks after the reaction. We would expect that some slight tremor of the hands might exist for several weeks since chorea appears to be the result of a cerebral lesion with gross structural changes of an inflammatory or degenerative type which would not be speedily repaired. Cases apparently resistant to nirvanol are seen in that no rash, fever, or pulse rise may occur after full dosage. Examination of the blood is very important in these patients at the expected time of reaction, since it appears, according to Poynton and Schlesinger,[5] that eosinophilia may at this time be the only apparent evidence of "nirvanol sickness." In two of my cases, such was true. This finding of eosinophilia is the most common blood finding in response to the drug, and occurs at the height of the reaction. In two weeks, the eosinophilia has disappeared. In all cases in which nirvanol treatment is used a preliminary complete blood examination at the onset of the administration of the drug should be carried out. It must be remembered that eosinophilia may occur in chorea without administration of nirvanol. Berger[7] reports forty cases with a general average of 7.6%, and found no relation between the severity of the chorea and the percentage of eosinophils. In my own cases only six of the sixteen showed an eosinophilia percentage above 2% when first seen, but with the administration of nirvanol twelve of the sixteen showed a definite further increase. The degree of eosinophilia seems to be of little value in estimating the rate of recovery from chorea. Too much stress cannot be placed upon the matter of watching the blood, both from the standpoint of noting eosinophilia and being on the watchout for any marked decrease in total white cell count. The lowest leucocyte count which I have observed has been 4,800. In general, it can be said that those cases showing a definite general reaction as evidenced by rash or fever with or without eosinophilia seem to improve the most rapidly, but two of my cases did definitely improve without the aforementioned symptoms. Urine examination on admission and at the height of reaction showed no variation from the normal. Examination of the red blood cells and hemoglobin two weeks after the reaction showed no alteration from the existent count before the drug was administered. In only three of my cases were there existent cardiac lesions and no evident change was noted in the cardiac status during treatment. The drug has been administered to children apparently in normal health and a typical "nirvanol sickness" develops so there is no evidence that the "nirvanol sickness" is a reaction confined solely to choreic individuals.

As regards the action of nirvanol, there is considerable difference of opinion. de Rudder[6] feels that the reaction produced by the drug is closely allied to serum sickness and that the success of the drug depends upon the development of a blood alkalosis during its administration with a sudden shift to acidosis at the time of the reaction, the abrupt change having an effect on the central nervous system. Poynton and Schlesinger[5] determined the blood-plasma bicarbonate, and noted a tendency to alkalosis during administration of the drug, but could demonstrate no tendency to acidosis subsequently. On five of my cases, using the colorimetric method of determining pH, I was unable to note any significant variation from a pH value of 7.3. Since nirvanol belongs to the barbituric class of drugs, one might suspect that its

primary action was that of a hypnotic and depressant to the central nervous system. Lenz[8] remarks that in chorea, degenerative changes are found in the system of small ganglion cells of the corpus striatum and the hypothalamic nuclei. He regards these changes as the equivalent of rheumatic nodules, and considers that the chief part in controlling choreic manifestations is due to the narcotic property of the drug, whereby stimuli traveling to the striated large cell system are inhibited. Gottlieb[9] states that nirvanol treatment is not essentially a fever treatment as the rise in temperature is not necessary in order to produce a favorable effect. Even incomplete reactions ofttimes result in improvement or cure. The fever produced is apparently not of central origin since Lesigang[10] showed that antipyrin was without effect in shortening the duration of the fever. This also tends to rule out the possibility of direct stimulation of the heat regulation mechanism by nirvanol. Too, the fever is not entirely dependent upon the rash for as has been mentioned before, cases appear without the rash, and with fever, and vice versa.

It seems that nirvanol acts cumulatively, as was evidenced in my own cases, and those of East[11] in which drowsiness was noted after a few days' administration. Lesigang[10] has used nirvanol in 106 cases of chorea and epilepsy and noted the tendency to drowsiness in most of his cases.

Occasionally, one sees the symptom complex present in "nirvanol sickness" after the administration of other drugs, but nirvanol seems to possess the property of more frequently eliciting such a reaction than any other drug. Rarely, according to Lesigang,[10] in an incidence of one per hundred, one may see the occurrence of an exanthem after one or two doses of the drug. Such cases, of course, appear to be a true drug idiosynerasy. One may assume that since the vast majority of cases do not react to a single dose of the drug, and since the appearance of the reaction occurs in a fairly fixed manner after a number of doses, that the body tissues have become altered in such a way that instead of simple narcotic action, a modified effect occurs; in reality, an active sensitization of the body to nirvanol. This idea is further enhanced by the fact that in three cases in which a nirvanol reaction had occurred and subsided, the subsequent administration of the drug about a week later produced "nirvanol sickness." This can hardly have been a cumulative effect although no definite studies are known concerning the excretion rate of nirvanol.

Nirvanol does not seem to depress the circulation or respiratory system or have any irritating effect on the kidneys nor does it appear to aggravate any existing cardiac lesion.

As regards the unfavorable symptoms or reactions occasionally associated with the use of this drug, it can be said that unfavorable results occur very seldom, but the fact that untoward reactions have occurred makes it necessary for the attending physician to be forearmed. In general, the complications in children are not present, and I am not aware of any fatalities in children although when the drug was first employed, it was used in adults and perhaps carelessly so, before its limitations and dangers were known and a few fatalities are recorded. Leichtentritt[12] and his co-workers have produced a marked leucopenia in rabbits with intensive doses of phenylethylhydantoin, but with the previously recommended examination of the blood and with prompt discontinuance of the drug's administration when fever, rash, pulse rise, or elapsed time of fourteen days has occurred, there is certainly no likelihood of an unfavorable reaction occurring.

Majerus[13] has reported a fatal case of acute hemorrhagic nephritis which he ascribed to nirvanol, but this patient had had a streptoccal empyema of four weeks duration. Leichtentritt[12] Lensfeld,[12] and Silberg[12] state that a secondary reaction may occasionally occur weeks after treatment, but recovery ensued.

Pilcher and Gerstenberger[2] have noted pulmonary disturbances from the drug, but no fatalities. They report fifteen cases, two of which developed a low grade pulmonary condition which was thought to be due to an inflammation in the bronchial tree resultant from the drug and analagous to the exanthem. Such a condition rapidly cleared up.

Goebel[14] feels that the drug may lead to extreme injury to the bone marrow, producing a clinical picture similar to agranulocytosis.

In contradistinction to the above possible unfavorable reactions, one must consider the

good results in the cases of various observers with no ill effects. For instance Marick[3] in treating twenty-three cases of mild to moderate chorea failed to develop a fever and rash in about one third of his cases, but noticed an improvement in most all cases and hospitalization was about four weeks. He considers hospitalization as not absolutely necessary during treatment. Huber[15] reported twenty cases, eighteen definitely improved. Lesigang[10] reported thirty-one cases, most of which were definitely improved. Gottlieb[9] had good results in fourteen out of seventeen cases observing a transitory hemorrhagic cystitis as a complication occurring in one case. Lengsfeld[16] in a report of thirty-five cases treated at the University Children's Clinic at Breslau states that twenty-three children were completely cured two and one half years after treatment while eleven cases showed recurrences. Tisdall[17] records twenty-nine cases treated with nirvanol, eleven of which were my original cases. Fifteen of the twenty-nine cases were considered cured in less than six weeks, while nine were markedly improved. Six of the fifteen cases or 40% were said to be relapsed within six months. He concluded that the use of nirvanol as a permanent cure of chorea seemed to be disappointing, but that the results were quite encouraging in the acute cases. It is a well known characteristic for chorea to recur and no figures are available to indicate that nirvanol hastens the recurrence. Ray and Cunningham[1] report that in cases receiving nirvanol the mean duration of chorea was thirty-one days; while in those receiving other means of therapy, the duration was one hundred fifteen days. Keller[18] treated nine patients and remarked that nirvanol stops the symptoms, and that even incomplete reactions result in improvement or cure. Concerning my own sixteen cases, I was able to induce "nirvanol sickness" as evidenced by the fever and rash, one or both, in all but two cases. These two cases however, did show blood eosinophilia which I took as an indication of a reaction. In all of these cases there was a marked lessening observed of the active chorea within the first week after the reaction, and in all cases there was no active chorea one month later. Three cases were of marked severity as evidenced by their being unable to feed themselves, emotional instability with marked speech defects, and body injuries from the movements. These three mentioned cases had had numerous recurrent attacks of chorea and had been in several hospitals. Eight of the cases showed marked movements, and inability to feed themselves, but no bodily injuries. The remaining cases were those of mild to moderate degrees of movements, but able to feed themselves. Only three cases showed a cardiac abnormality which seemed not to be influenced by the drug. It is evident from this brief summary of cases which I personally observed that there was a marked shortening of the active stage of the chorea with a coincident shortened hospitalization without any unpleasant reactions.

The point naturally arises in discussion of this type as to what the effect of this drug may be on the prevention or relapses of chorea or its use in preventing rheumatic cardiac disease. As previously mentioned, Lengsfeld[16] states that 30% of his cases showed recurrences within two and a half years; while Tisdall reports 40% as relapsed within six months.

Concerning the effect of the drug on the existing cardiac lesions which are often present, there are no available reports of any ill effects on the cardiac state occurring from its use. In fact, several authors feel that beneficial effects on an accompanying carditis may oft-times occur. This is extremely important, if true, since Poynton[5] states that in two hundred twenty cases coming to the hospital with chorea, obvious heart disease existed in one hundred twenty-two of the cases. Schlesinger[20] is of the opinion that nirvanol has a beneficial effect on the disappearance of the rheumatic nodules, and he reports a case of acute rheumatic chorea in a boy, age 7½ years, who showed numerous large and painful nodules, fever, and tachycardia and mitral stenosis. After ten days of nirvanol, the reaction had occurred, the chorea disappeared, temperature and pulse rate dropped to normal, and the nodules rapidly diminished in size and number. There was a subsequent attack of acute tonsillitis with a return of symptoms, and a second course of nirvanol again had a similar effect to that which resulted after the first course. I am unable to find other observers who have confirmed Schlesinger's ideas on the disappearance of the nodules after nirvanol treatment.

If such can be further definitely proven and demonstrated then perhaps a true idea of the curative effect of the drug in chorea will be evidenced; namely, its effect in destroying the rheumatic nodules which Lenz[20] describes as existing in the ganglion cells of the globus striatum and the hypothalamic nuclei in cases of chorea.

In the foregoing paragraphs, I have tried to present a concise description of the use of phenylethylhydantoin or nirvanol, and to convey some idea of its wide-spread use, particularly in Europe. Even though there are certain rare ill effects which result from the use of this drug, it seems at present that perhaps it offers the best, from a therapeutic standpoint, in the treatment of chorea in children as evidenced by the almost dramatic effects which frequently occur in cases in which other means have failed. There is a definite shortening of the hospital stay of these patients. There seems to be no greater tendency to relapse in patients who have had nirvanol than in those who have had some other form of therapy. In several of my cases and in many of those reported in the literature, it was used when other measures had utterly failed, and produced good results. If the ordinary hospital routine examination of blood count and urine examination are carried out and a close watch made by the physician in charge for the appearance of any of the triad of "nirvanol sickness" at which time the drug must be stopped, then I see no chance for an element of danger to enter into the treatment by this method. In all fairness, it must be said that the definite mechanism whereby this drug asserts its effect is not settled. Sir Archibald Garrod has said that one can cure chorea in six weeks with any drug provided that one give it in doses that are toxic, and too, we all realize the marked variability in intensity and duration and symptoms in this more or less self-limited disease, which naturally brings up the question of whether or not one is justified in using a drug which has potential danger. I have tried to show that the effect of nirvanol is rarely if ever alarming provided ordinary precautions are carried out in each case. Certainly, I feel from my own meager experience of sixteen cases treated with this drug that the results obtained have justified its use. Nowhere in the literature do I find the suggestion that it should not be used in severe cases, although several authors suggest that perhaps the mild and moderate cases should be treated by some other means. Even though reports show that the best results are obtained in the most severe cases, I see that as no reason why we should not use this drug in cases of any degree. It is a well known fact that the acute cases of chorea recover more rapidly than those which are never very severe, and since mitral disease is apt to develop in these recurrent or low grade cases, I feel that the use of nirvanol should not be withheld. Undoubtedly, the justification of the use of this drug rests upon the fact that by the abolition of the chorea, we may be able to prevent the onset of a carditis. To date there are no figures except the work of Schlesinger that so indicate that the rheumatic infection is specifically affected. However, the clinical results of any form of treatment should be our measure in determining the efficacy of that treatment, realizing that the first law of therapeutics should entail doing only those things which will do no harm to the patient.

There is another form of therapy recently advanced by Lucy Porter Sutton[21] when she reported twenty-four cases of chorea minor treated by means of intravenous injections of paratyphoid vaccine to produce fever. She considers that this treatment is much more satisfactory than any other used at the Bellevue Hospital. Her decision to investigate this type of therapy is interesting in that she observed a case of marked chorea treated by luminal which developed a generalized rash and fever under the drug, the pyrexia existing for several days. Strangely the chorea began to improve and continued to do so. She became concerned with whether the fever was the factor that brought about the improvement in this case and whether it might not be the factor of paramount importance in cases treated with nirvanol. Starting with the initial dosage of 0.1 to 0.2 cc. of ordinary TAB intravenously daily for about a week depending upon the reaction, there was a dimunition in the chorea. In comparing the TAB cases with sixty-three cases not treated except by rest and other medicine, the average stay in the hospital of the sixty-three cases was forty-seven days varying, of

course, with the degree of their chorea. In the TAB cases, the average duration was nine days. Even though it is well known that the average case of chorea will improve in about eight to ten weeks without any specific treatment, it seems advisable to use some form of therapy which can reduce this prolonged hospital stage and in Dr. Sutton's cases the average patient is ready for discharge in about three weeks after admission.

Phenylethylhydantoin has not been used on the children's medical service at Bellevue Hospital because of Dr. Sutton's desire to investigate the forms of fever therapy. She suggests in her article that the main benefit from nirvanol seems to lie largely in the fever produced. As mentioned before, though the most striking results seem to occur in those cases which develop fever, many cases have been reported which make a good clinical response without any evidence of fever. Certainly, the narcotic effect of a drug of this type cannot be totally dismissed. If in the production of fever lies the power of nirvanol to assert its beneficial effect in chorea (I do not feel that this is the essential action of nirvanol), then it is quite evident that other modes of therapy whereby fever may be produced, such as the giving of TAB vaccine would perhaps be superior, since there would be no need to wait seven to fourteen days for the reaction and the likelihood of producing a fever with the TAB would be greater than in the use of phenylethylhydantoin. Until further studies are made as to whether or not nirvanol is a specific anti-rheumatic, it will be difficult to determine the real value of these aids in treatment.

In summary:

1. The two outstanding threapeutic procedures in vogue today for the treatment of chorea minor, namely, phenylethylhydantoin and the production of fever by paratyphoid vaccine are discussed.

2. In properly controlled cases without evidences of existing complications, there seems to be no danger from the use of nirvanol in the treatment of chorea minor in childhood.

3. Suggestive evidence is appearing that nirvanol may be of definite anti-rheumatic value. Certainly, its effects in shortening the duration of chorea is not solely the effect of the induction of fever.

4. By the use of phenylethylhydantoin and the shortening of the active stage of chorea, the incidence of subsequent carditis may be lessened.

5. Phenylethylhydantoin offers a valuable aid in therapy, particularly in the more severe cases of chorea, although there is no definite reason why it may not be used in even the mildest cases.

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DISCUSSION

Dr. Gerald M. Cline, Bloomington: I think that Dr. Whitaker has brought us a very timely subject. We all know that chorea has been a disease with which we have had plenty of trouble, and particularly with its recurrences.

In the literature and also in our own experiences we know of many different modes of treatment. Nirvanol, as he told us, is not generally used in the United States. It had its beginning in Europe, and as far as we can tell, even today there are not very many men using it in this country. I think that he has covered this subject very well.

There are a few points worthy of mention that we might meet in private practice. For one thing, it will produce a rash on the child. So often the parents become quite excited over rashes. It is hard enough sometimes to sell the parent on the fact that she has a long time ahead of her to get her child well; and if we are going to produce a rash, a fever, and alarming symptoms, I believe that that is going to be one of our contraindications.

Another thing that he brought out is hospitalization. Certainly from what Dr. Whitaker has told us and from what I can gather in the literature, it is seemingly much safer to have these cases in the hospital where we can watch them very carefully, and there again sell the parent on the idea of what the child has to go through.

The complications, as he told you, are still debatable.

Some men get good results with no complications; other men have reported complications. The fact that the disease produces this peculiar triad and also the fact that we have the changes in the blood system, is somewhat debatable. Almost all men who have reported on it report on the eosinophilia and the leukopenia, and yet I know of cases where there has been a leukocytosis and no eosinophilia and other cases where there has been an eosinophilia and no leukocytosis. In cases, with such a peculiar blood picture as this, we would have some trouble to know just when our reaction is beginning.

As Dr. Whitaker has stated to you, some of the German men have given us quite a fear, I think, as to the safety of this drug. In fact, we know that it does produce changes in the bone marrow in rabbits and it does produce in a great many cases a leukemia. They have made the statement, as he has told you, that it is perhaps much safer to quit between the 12 and 14 day with the drug, regardless of what the blood picture reaction shows, because we do not know what changes we might produce in the bone marrow.

I also ran across a condition that some men have reported, and that is a secondary reaction as high as 39 days after the first reaction; and secondary reactions, of course, have sometimes been recorded to be just as severe as the primary ones.

I do feel that we are fortunate to have this paper presented to us, because it opens up a new field for us to try. It is going to take perseverance and a lot of selling of our patients, hospitalization, and a lot of hard work to get results with it; but if it will do what so many men have reported, without causing troubles in the way of heart and kidney complications, certainly we have a drug added to the field of therapy of chorea that is worth while.

Dr. Walter M. Whitaker, Quincy: I had hoped that there would be some discussion and that you men would not confine your remarks solely to the use of nirvanol, because I think, as Dr. Cline has properly said, the drug has been used very little. In fact, in this country I can find only three doctors, aside from myself, who have reported in journals, on this subject. You can pick up almost any German publication on pediatrics and find an article on nirvanol in the treatment of chorea.

Dr. Cline has brought up something that I have not had any difficulty with and have not thought about—namely, the fact that you have to sell this form of treatment to the parents, or that anything which may produce a rash or fever in a child may be alarming. I have had no difficulty in private practice with that. I must say that most patients in whose treatment I have used nirvanol have been ward cases in hospital practice; but in private cases I have had no difficulty in explaining to mothers what we hope to accomplish by the use of this drug.

Certainly, I wish to impress again that the careful observation of these cases—not any more critical, I think, than anyone would observe a chorea case unsolicited—will keep one from the misuse of this drug.

Of course, I do feel the necessity of hospitalization. I have never treated any cases in the home. I feel perhaps that it is safer to have the child in the hospital. In private practice I think that many people would prefer that a child with chorea be in the hospital and away from the rest of the family, anyway. I think that that is an important point.

In regard to eosinophilia, as to whether or not it is always present and whether or not it can be taken as a sole indication of the reaction, as previously mentioned in my own experience, practically 75% of my cases showed an eosinophilia of 6 to 12% at the height of the reaction. You must not place too much reliance on an eosinophilia. Berger has reported forty cases showing an eosinophilia to the extent of 7.6% without any particular treatment. In two of my cases, an eosinophilia was the only evidence of a reaction. In regard to bone marrow changes, I believe that Goebel has reported these; in his case there was a severe leukopenia following this rash. The lowest blood count that I have observed was 4,800.

Concerning the secondary reactions which rarely occur and have been reported 39 days after the reaction, Leichtentritt goes so far as to say that exposure of these patients to sunlight within a few days after the reaction will ofttimes produce a reappearance of the rash. I tried that in three or four cases and I was not able to notice any recurrence of the rash. As Dr. Cline mentioned, even though the rash did reoccur there were no ill effects and the child recovered.

In summary, I feel that in presenting this paper one must realize that the nirvanol treatment of chorea is certainly not accepted as a world-wide, rational form of therapy. Schlesinger, in presenting this subject at the British Pediatrical convention in 1929, was very cautious about any rash claims of cure but in the succeeding elapsed years, he has remained an ardent advocate of such therapy. He is the man who now believes that he has definitely seen cases where endocarditis disappeared, as well as chorea, following the use of this drug.

Certainly, those things will only influence me to be eager to investigate the use of this drug; and I hope that some of you, particularly in your severe cases of chorea, will have occasion to try it.

HELIOTHERAPY AND PERIPHERAL BLOOD

G. Hoeffel and D. Lyons, Chicago, are of the opinion that there is no justification for the belief that light rays, considered either collectively as including the entire spectrum or individually as ultraviolet rays, have any specific effect on the blood. The effect of light on the healing of a pathologic process, such as tuberculosis, cannot be distinguished from that exerted by other factors, the beneficial influences of which are well recognized.

Gent: (entering attorney's office) "I want something to quiet my nerves."

Attorney: "But I'm not a doctor, my good man. I'm a lawyer."

Gent: "I know it, I want a divorce."—Film Fun.

XANTHOMATOSIS SCHÜLLER-CHRISTIAN'S DISEASE.*

WALTER WILLIAM DALITSCH, M.D., D.D.S.
CHICAGO

Recent contributions to the literature testify to the increasing interest in the condition known as Schüller-Christian's disease or Xanthomatosis. Sosman[1] brings the total reported cases to forty-five. As he points out, probably many cases are recognized and not reported or reported under unrecognized titles; and probably many more are unrecognized.

The purpose of this paper is to report one such additional case with certain pecularities; and to emphasize the early and frequent occurrence of oral lesions, as an important manifestation of this condition.

A review of cases in the following paragraphs shows the freqency of oral lesions and the fact that they are of early occurrence in the course of the disease; not uncommonly they are the initial complaint.

It would seem from the lack of detailed description and the lack of x-ray and histological findings of oral lesions, that not enough attention has been focused on what apparently is a common and early sign of this condition.

Lyon and Meyer[2] have called attention to the frequent and early occurrence of oral manifestations as an important part of the picture of Schüller-Christian's syndrome. They cite ten cases with oral symptoms and summarize the findings as varying from large defects in the maxillae, severe gingivitis, to loosening of the teeth etc.

They stress the conclusion that Schüller's disease should be considered in cases showing chronic disease of gums, or defects (cysts?) in the jaw-bone as demonstrated by roentgen examination and that the diagnosis may be established by histological examination.

Sosman[1a], stated that "one of the most common symptoms and one of the earliest signs is involvement of teeth and gums in children, by an ulcerative inflammatory process classed as gingivitis which results in loosening of the teeth and sometimes the loss of the tooth or teeth involved. This was found to be due to a deposit of the lipoid at the apex of the tooth and a pad of this fat-like material usually comes out with the tooth when it is removed". Sosman[1b] mentions gingivitis as one of the characteristics of Schüller-Christian's disease along with defects of bones, exophthalmos, diabetes insipidus etc.

He comments that the symptoms may be quite variable and that no one of the triad:—bone defects, diabetes insipidus and exophthalmos, are essential to a diagnosis. Nor are gingivitis and stomatitis, which are common early in the disease, always found. He discusses treatment and concludes that only x-ray therapy is of certain value.

He reported three cases—the first one was a male age 55, with no jaw lesions.

His second case occurred in a boy two and one-half years of age with initial symptoms of sore mouth and gums, followed later by polydipsia and polyuria. Examination showed alveolar swellings which were tender and ulcerated. A tooth fell out perched on top of a fat pad. Sections of gingival tissue were reported as acute gingivitis. After x-ray therapy, examination after two years showed an improved condition, but new areas of bone destruction were found in the left mastoid region and in the mandible and maxillae. These areas had received no roentgen treatments. In this case the oral symptoms were the initial complaint.

The third case was a boy four and one-half years of age whose illness started with exophthalmos and cranial lesions. Examination five months later showed carious teeth and several empty sockets. New defects in the skull, pelvis and long bones followed. Two years later examination showed small areas of de struction—one in the mandible, one in the right petrous ridge and one on the edge of an old frontal defect.

Rowland[3a] discussed the etiology of Schüller-Christian's syndrome as related to xanthomatosis and to disturbances of the reticulo-endothelial system. He cited one case of a boy age two with extensive cranial defects and exophthalmos—and stated "the alveolar processes were swollen and tender and most of the teeth were loose and infected, producing a foul odor to the breath. He had already lost a number of teeth, ten having been extracted at one time. The alveolar arches were irregular

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and swollen and bled easily—only three teeth remained. They were the lower incisors and were loose and covered with a tartar-like substance. Tenderness and swelling were present over the maxillae, which added to the fullness of the lower portion of the face".

Citing a second case, Rowland stated that when under two years, this boy's early symptoms were "soreness of the mouth, polydysia and polyuria"; and the mother ascribed the symptoms to teething. At twenty-two months the soreness of the mouth grew worse, and several of the teeth loosened and came out. On physical examination it was found that "the gums were swollen and tender, bled easily and were retracted from the teeth". All the molar teeth in both the upper and the lower jaws were loose. The teeth appeared normal. Pus could be expressed about some of them. X-ray examination showed bone erosion of the right and left parietal bones, temporal and frontal bones and maxillae were also involved. There was erosion of the lateral wall of the left maxilla and clouding of the antrum". No mandibulary x-ray examination is reported.

One year later the patient appeared well. The exophthalmos had receded, the soft spot in the left parietal region had reduced and the sinuses and teeth were in good condition.

Christian's[4] first case was a girl five years of age. She complained of soreness of the mouth around the teeth for two years. She was normal until three years of age, then the teeth began to decay and became loose and her jaws became swollen and tender. No other symptoms were noted. Her mouth continued sore and at three and one-half years her right eye became prominent, and thirst and frequency developed. There was constant pain in the head, bilateral exophthalmos and a progressive increase of symptoms. Examination of the mouth disclosed caries, some teeth missing and a foul breath. The teeth showed poor care and pus around the gums.

In this case mention is made that the dental lesions were the initial complaint occurring one half year before the onset of the other symptoms. No x-ray report or detailed description of the mouth lesions is presented.

Schüller[5] made no mention of dental or oral lesions, in reporting his two cases; although one case did have possible sarcoma of the right upper jaw.

Hand[6] reported two cases, the first with no mention of oral lesions. His second case was a boy of seven, with the history of scarlatina at four followed by a discharge from the right ear. Four months later he had vertigo and pain in the head and enlarged cervical glands. Five months after the attack of scarlatina "the gums began to separate from the teeth, and this was followed by a gradual loss of most of the teeth, beginning with the molars. About the same time, the mother noticed a soft spot on the head, where there seemed to be no bone." At six and one-half years of age exophthalmos appeared, followed in four months by polyuria. The bones of the body except the cranium and lower jaw appeared normal. "The lower jaw had lost its bone salts, and the resultant cartilaginous mass, containing one incisor had been so deformed by the depressor muscles that the chin had disappeared." Here again the unusual oral disturbances occurred early, a considerable time before the onset of exophthalmos and polyuria.

Grosh and Stiffels'[7] case was a girl aged seven. At six years of age, a tooth became infected followed by an infection of the left mastoid, which was opened and drained. Her mouth became sore with a bullous eruption on the gums, which necessitated the removal of some of the unerupted permanent teeth. Polyuria and thirst developed seven weeks after the mastoid drainage. Unilateral exophthalmos was present. The soreness of the gums seemed to vary directly as the amount of sugars and starches ingested. The x-ray report at ten years of age stated "there is a deformity of the lower jaw with abnormal position of the teeth and apical infection of some of the teeth." Striking defects were observed in the right temporal bone, orbit and ilium. Removal of unerupted permanent teeth in a child of six, points to a most unusual mouth condition, which was present seven weeks before the other symptoms developed.

Thompson, Keegan and Dunn[8] reported their case, a boy of nine, as having been normal until fourteen months previously when an attack of measles was followed by looseness of the teeth and soreness of the gums;—fully six months before excessive thirst and urination appeared, followed by a soft spot on the side of the head. Examination showed "the mucous membrane of the mouth was normal but there was a marked

gingivitis. The teeth were clean and sound but loose. Both maxillae showed spotted areas of bone absorption similar to those of the skull (i.e. irregular defects)". Two years after the onset, examination showed marked progression. The gingivitis was severe, and the teeth were held only by the soft investing tissue, as the alveolar processes had been absorbed. They stress the antecedent infection as an etiological factor.

Denzer's[9] patient, a boy four and one-half years of age had noticed soft tender spots on the head two months after tonsillectomy. Examination showed bad teeth and spongy gums and many soft spots on his head. X-ray examination showed extensive defects in the cranium and maxillae. One year later thirst, polyuria and proptosis developed. As the bone lesions preceded the diabetes insipidus by one year, a pituitary cause of the bone defects is unlikely.

Kyrklund's[10] patient, a girl of twelve, appeared to be of a dystrophia adiposo genitalis type. There were numerous cranial defects and exophthalmos. The teeth were in bad condition, but detailed description was not given.

Bach and Middleton[11] added one case which showed symptoms of diabetes insipidus with marked bony changes of the ribs, vertebrae, head and upper portions of the shafts of the femur and of the pelvic bones. Their case noted no involvement of the oral cavity or jaw bones.

Brauham and Lewis[12], discussing their case of multiple myeloma, emphasized the prominent part that dental illnesses played in the clinical course of this case. This patient had a succession of extractions, frequent trips to the dentist, cellulitis of the jaw, possibly abscessed tooth with some doubt as to the nature of the attack, more extractions and erysipelas. The authors believed some connections between the erysipelas and jaw infections was probable but did not mention any association between the jaw manifestations and the myelomata.

Sophian[13], in describing the clinical history of his case of osteitis fibrosa cystica, mentions that his patient had complete extraction of the teeth at the age of twenty-six. One would assume that some unusual condition of the teeth or jaw was present to necessitate such a radical procedure at that early age but no mention is made of any involvement of the jaw bones in association with the osteitis fibrosa cystica.

Griffith[14] reported one case, a boy aged nine, with defects in the skull, exophthalmos, diabetes insipidus and cutaneous xanthoma. There were marked irregularities in development of the teeth and the mucous membranes were dry and icteric. No mention was made of gingivitis or oral x-ray findings.

Pickhan and Joel[15] as quoted by Lyon and Meyer, reported a case in a five year old boy who developed chronic oral disease following an attack of whooping cough and enteritis at the age of two. At about three and one-half years of age he gradually developed protrusion of the eyeballs and later the teeth became loose and fell out. X-ray examination disclosed large cyst-like defects in the mandible. Other defects were noted in the cranium and sella. No diabetes insipidus was present. Histological examination of the contents of the defects in the jaw bone showed the yellow fat-like deposits characteristic of Christian's syndrome. A later report of this case by Anders[16] stated that all the teeth were eventually lost, spontaneous fractures of the jaws occurred and diabetes insipidus developed.

Henschen's[17] case in a girl of three showed excessive thirst, enlargement of the liver and spleen and loosening of the teeth resembling gangrenous stomatitis. There was a possibility of mercury poisoning as an etiological factor in his case.

Slauck and Donalies[18] reported a case of osteitis fibrosa in a forty-seven year old man. Diabetes insipidus was present for eight years and exophthalmos for one and one-half years. There was an inability to open the mouth more than one and one-half centimeters, and the teeth were carious.

Case 1. A. F., aged 30 years, white, Russian Jewess; married, separated from husband; housewife, was admitted to the Research and Educational Hospital on the Medical service on November 10, 1930, complaining of great thirst, frequency of urination, loss of weight (twenty-five pounds in one year) and pain on the left side of face and jaw.

One year previously she complained of constant pain on the left side of head and face and for that reason in September, 1929, a tooth had been extracted and shortly thereafter she noticed that she was always thirsty. This became progressively worse and she was drinking great quantities of water. It was necessary for her to get up at night on an average of once an hour to drink.

Starting at the same time i.e. September, 1929, the patient had frequency of urination, and nocturia. It

was necessary to void every hour both day and night. She stated that as soon as she voided urine she immediately felt a great desire to drink more water.

She had had pain in the left side of her face for the same length of time and thought that this was due to the fact that her gums had not healed where the tooth was removed.

A loss of twenty-five pounds had occurred since the onset of her illness because most foods made her "feel very dry" and more thirsty so that she was impelled to drink more water and therefore avoided food.

Inventory by systems added the information that she had frequent and severe headaches on the left side of the head which she thought was an extension of the jaw pain. She had also had a proptosis of the eyeball for about one year.

Her past history revealed only the usual childhood diseases. She had one child aged eleven years and no miscarriages. Her menstrual history began at fourteen and was regular until the onset of her illness since which she has menstruated irregularly at intervals of about two months. Duration was four to five days and no dysmenorrhea. She has been separated from her husband for about eight months. The family history was entirely negative.

Physical examination disclosed proptosis of the left eyeball. No other eye defect was noted. The eye ball protruded but the palpebral fissure was not widened and there was no lid-lag, giving a characteristic "frog-like" or "fish-eyed" appearance rather than the stare seen with the exophthalmos of goiter. Fundus examination by Dr. Hallard Beard revealed no choked disc nor other pathology nor any cause for the proptosis of the left eye and the conclusion was reached that this abnormality was congenital although the patient stated definitely that it was not present before the onset of her illness.

The mouth examination disclosed a deep opening in the alveolar portion of the left side of the mandible at the region of the second molar. There was no drainage from the opening. Although the margins of the opening appeared clean and epithelialized, and no odor or other indication of infection or inflammation could be detected, a probe entered this cavity for a depth of about one centimeter.

Pain and tenderness in this region appeared to be constant. Palpation disclosed softened areas on the surface of the mandible at various places. The gum tissue over these areas appeared normal except for a slight hyperemia. Further examination of the neck, chest, abdomen revealed no abnormalities. Arms and legs showed a roughening of the skin with eruption on left elbow resembling psoriasis.

Blood Count:
Leucocytes 12,800
Erythrocytes 4,560,000
Diff. Polymorphonuclear neutrophiles ..74
Lymphocytes 22
Eosinophiles 1
Large Mononuclears 3
Hemoglobin .....10.5 Gms. (Newcomer)

Urinalysis—showed a colorless urine.
Specific gravity 1.002
Acid in reaction
No albumin
No sugar
No casts

Bence—Jones protein—not present on repeated examinations. Kahn test negative. Blood pressure 130/90, 100/80.

Blood Chemistry:
Sugar—145 to 151 mgs.
N.P.N.—30 mgs.
Blood calcium 11.04 mg. to 12.65
Cholesterol 180 mg.

During her stay in the hospital on regular diet she averaged an intake of fluid of 9,200 cc and an output of 9,400 cc.

Stool examination negative.

X-ray examination revealed no abnormality of the sella turcica which might indicate a pituitary tumor. There was no defect in calcification of the cranium at any time.

The mandible showed a number of areas of rarefaction sharply outlined, and irregularly placed giving an appearance which is most aptly described by the term "moth eaten."

These areas of decalcification were in some cases in contact with tooth roots, in others they were isolated in the body of the mandible. The teeth were all vital as detemined by the electrical current. These defects in the bone did not seem to be surrounded or walled off by any more densely calcified layer of bone tissue.

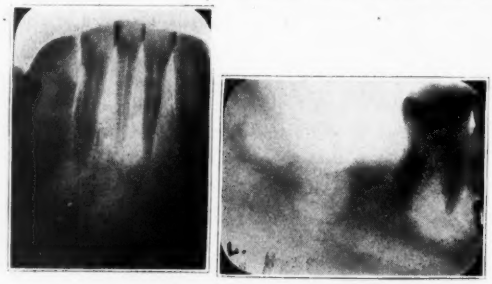

Fig. 1. November 10, 1930. Appearance of lower left molar region and lower incisor region.

Figure 1 shows the x-ray appearance of the left molar region of the mandible which was the site of the first extraction and the region of the patient's greatest pain. It will be seen that here there are four large areas of rarefaction of a cystic appearance—one at the crest of the alveolar process, and just below, one in the body of the mandible lying in relation to the mandibular canal, and one in relation to the mesial root of the first molar. This tooth was vital.

Figure 2 shows three areas of rarefaction—two of those in contact with the roots of the left lateral and central incisors and the third completely surrounded by normal bone tissue.

X-ray examination, November 15, 1931, shows two areas below the lower right third molar and one to the mesial of the first area. The x-rays of the upper teeth disclosed loss of the interproximal septum of bone between the second and third molars on both sides. An incidental finding was the bilateral impaction of both cuspids and retention of the right deciduous cuspid.

Fig. 2. Same area three months later (Feb. 12, 1931), showing further increase of bony defects.

Three months later, on February 12, 1931, another x-ray examination showed a considerable increase in the size of these decalcifications.

A subsequent examination on May 18, 1931, approximately three months later, again showed a marked

Figs. 3 and 4. May 18, 1931, showing marked increase in size of affected areas.

increase in the affected areas. Here may be noted additional cystic areas below the left cuspid (Fig.3) and right second bicuspid (Fig.4). Note also the extensive loss of alveolar process in the region of the upper right bicuspids. The upper right second and third molars had been extracted.

By this time the loss of bone in the regions of the left lower molar and of the incisors was so marked that no bone could be felt upon palpation or with an exploring probe.

The gum tissue areas over these were quite hyperemic, but showed no swelling nor tenderness nor any exudate, purulent or otherwise. The patient complained of constant pain, however, and additional teeth were removed by various dentists upon the insistence of the patient. These extractions resulted in no relief of the pain. The sockets seemed to remain open indefinitely with no evidence of infection, however. Months after a tooth had been removed, the socket could be found practically as large and as patent as at the time of the extraction.

The skull x-rays as stated showed no abnormality. Examination of the long bones in April, 1931, showed no abnormality.

The patient was treated with extract of posterior pituitary gland and derived considerable relief from the polydypsia and polyuria. The extract was effective only by hypodermic injection. Nasal instillation gave slight relief and oral administration gave none. One ampule (lcc) of obstetrical pituitary extract posterior, allowed the patient to sleep six hours without voiding and decreased the thirst for twenty-four hours. An attempt was made to continue the administration of pituitary extract every other day but due to the unreliability of the patient, treatment was desultory.

The patient was kept fairly comfortable with a dose of pituitary extract posterior twice a week, but as seen from x-rays no improvement was evident in the bone disease.

In August, 1931, the patient complained of constant pain in the right leg above the knee. This became progressively more severe. X-ray examination in October and December 1, 1931, revealed numerous rarefied areas in the lower end of the right femur. (Fig. 5) It will be recalled that a previous examination of the long bones in April, 1931, three months earlier, had disclosed no pathology.

Fig. 5. Numerous areas of decalcification in right femur. (Dec. 1, 1931) Previous x-ray examination of this area in April, 1931, had revealed no pathology.

Fig. 6. October 22, 1931. Right mandible showing extensive defects.

The jaws and teeth appeared practically the same as noted in the previous examinations (Fig. 6). Microscopic examination of scrapings from one of these rarefied areas in the mandible yielded the following pathological report:

"In sections made from the scrapings submitted for examination, the tissue is seen to be composed of young granulation tissue densely infiltrated by lymphocytes and macrophages. There are no evidences of tumor tissue noted.

"Diagnosis—Chronic nonspecific inflammation."

Roentgen therapy was tried on the right femur with resulting relief of pain and discomfort. X-ray examination subsequently, March 11, 1932, (Fig. 7) showed a

Fig. 7. October 22, 1931. Left mandible showing marked defects.

slight decrease in the size and intensity of the rarefied areas, but showed similar extensive defects developing in the left femur which had not received any x-ray therapy.

The patient was hard to control and would not keep appointments for treatment regularly. She left our care and entered Cook County Hospital in June, 1932. Without knowing the previous findings, a diagnosis was made there of diabetes insipidus, extensive pyorrhea, and chronic arthritis of both knees. She was treated with salicylates and gonorrheal vaccine intravenously.

Several days later, she was seen by their oral surgery department, which reported "no pyorrhea", but infected necrotic bone cavities in the mandible.

Their x-ray examination disclosed cystic degeneration of the mandible and both femora. The skull and sella were negative.

Urine examination was negative. The daily output was 8,500 cc.

Microscopic examination of tissue from the mandible showed inflammatory granulation tissue. The patient was referred to the medical service and a diagnosis of Schüller-Christian's disease (Xanthomatosis) was made.

Comment: This case, then, is that of a female patient, aged thirty, with symptoms of constant pain in the jaws and loosening of the teeth, diabetes insipidus and unilateral proptosis; and findings of multiple defects in the mandible occurring fully two years before similar defects appeared in the femora.

A constancy of pain was present which seems characteristic as noted by Bach and Middleton.[11]

Histological examination was suggestive but not characteristic, but the picture may have been distorted by inflammatory changes. Rothmein[19] has called attention to the fact that the pathological report must be considered with reservations. In his case, the pathological diagnosis varied with the pathologist from "tuberculosis granulation tissue," and low grade inflammation to "multiple infectious lesions."

The difficulty of recognizing the oral lesions is illustrated in this case. The first diagnosis was that of dental abscess and our first x-ray report was "apical abscesses." Several physicians and dentists have seen the case and have made various diagnoses such as pyorrhea, stomatitis, gingivitis, neuralgia, osteitis cystica, dentigerous cyst, syphilis, neoplasm, osteomyelitis and multiple myeloma.

Differentiation from the commoner conditions of stomatitis, gingivitis and periodontitis (pyorrhea) should not be difficult if a thorough oral examination is made. Stomatitis presents ulcerations, necrosis of the soft tissues and evident inflammatory changes, which were not found in our case.

Gingivitis is characterized by swelling, con-

gestion and bleeding around the necks of the teeth.

Pyorrhea is characterized by a loss of attachment of the soft tissues which join the roots to the gums and sockets. There is usually a purulent exudate in the space or pockets thus formed. Our case showed no such changes.

The fact that the rarefied areas in xanthomatosis were not in relation to root ends, that they were not circumscribed by any denser area of bone and that no swelling, purulent exudate, odor or glandular enlargement was present, helps to differentiate from apical abscess, cystic conditions and myelomata.

Surgical procedures—extractions, curettement and drainage—left a clean defect but with no improvement.

Treatment with pituitary extract posterior gave temporary relief from the frequency and polydipsia.

Roentgen therapy gave relief from pain and caused an apparent improvement in the bone defect; but defects appeared in other untreated areas in the opposite femur.

It was hoped that anterior pituitary extract might be tried to observe the effect in the bone lesions, but the patient would not submit to additional injections. It is urged that this be tried, as it seems possible that anterior pituitary extract has a greater influence on bone calcification than the posterior pituitary extract.

Summary

1. A review of previously reported cases of Schüller-Christian's disease indicates that dental and oral lesions and jaw bone involvements are frequent and usually very early manifestations. They often are the initial complaint and often precede other symptoms by a considerable length of time.

2. A case is added with the characteristic features of: oral lesions, bone defects, diabetes insipidus and proptosis; and having the peculiarities of:—early marked bone defects in the mandible occurring two years before defects occurred in other bones; and a rather late age of onset at twenty-nine years.

3. Emphasis is placed upon the advisability of a thorough study of jaw lesions as a means of identification and early recognition. Schüller-Christian's disease should be considered in cases of stomatitis, loosening of the teeth and bone rarefaction of unusual character; and on the other hand, oral lesions should be looked for in cases showing diabetes insipidus, proptosis and other bone defects especially those of the skull. Attention is called to the constancy of pain as a symptom of the bone disturbance.

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TWILIGHT SLEEP

Q.: "What is the first thing you would say to a Twilight baby?"

A.: "Does your mother know you're out?"

CURETTAGE

First Physician—"Do you know Mrs. Blank?"

Second Physician—"Yes—I had a scraping acquaintance with her."

PURPURA HEMORRHAGICA OF THE SCHOENLEIN-HENOCH TYPE*

(Report of a Case).

J. Sheldon Clark, M. D.

FREEPORT, ILL.

My attention to the literature upon this subject was incited by this experience in May and June, 1930. I was called in consultation to see this patient because of the severe inflammatory reaction in both eyes, which had then existed for six days before her entrance into the hospital.

There are so many manifestations of purpuric disease that one hesitates in a given case to be certain of his classification. Osler speaks of the many characteristic lesions of the skin in cases of purpura: all varieties of purpura; wheals and edemas; erythema with or without swelling; necrotic areas due to localized infiltration of the skin. Where there are joint symptoms the most common joints to be affected are the ankle and knee, and the pain can be most excruciating. Involvement of the kidney is often quite serious, and in the case here reported, was accompanied by an anuria lasting for several hours, so that life was despaired of by reason of this complication, the patient becoming quite drowsy and for a time unconscious.

Only a single blood examination was made which showed the following: hemoglobin 80 per cent.; erythrocytes 4,720,000; leucocytes 16,000; red blood cells normal as to shape and size; blood platelets were normal. A blood Kahn test was negative.

In a historic review by Goldstein[1] I glean the following: He ascribes to Willan[2] (1808) the description of a case of purpura occuring in a woman 36 years of age, who ran a course of abdominal colic, vomiting, a bloody diarrhea, painful and swollen joints, and skin lesions such as purpura, urticarial wheals and angioneurotic edema. To Schoenlein[3] goes the credit for describing and giving due importance to joint symptoms in cases of purpura characterized by painful, tender and swollen joints. In 1874, Henoch[4] reported four cases of purpura, and in addition to joint pains described by Schoenlein and the purpura, he mentions other symptoms, such as vomiting, colic, and later observes that there is an accompanying nephritis with hematuria. This brings the disease to about the place it is known at the present time.

Others are of the belief that the purpura simplex, the rheumatic type and those with generalized hemorrhage, are simply varying degrees of intensity rather than being clinical entities. Variations in the bleeding time have been noted, some finding it normal while others note an increase in the bleeding time. It was normal in our case.

As to differential diagnosis, Goldstein quotes Frank, Glanzman Pfandler and von Seht as to the differentiation of Schoenlein-Henoch's purpura from purpura hemorrhagica, both from the blood and clinical aspects, and gives the following table:

	SCHONLEIN-HENOCH	PURPURA HEMORRHAGICA
Constitutional symptoms	Malaise, headache, anorexia, coated tongue, fever.	Few; no fever unless secondarily as result of complicating infection or profound anemia.
Special features	Urticaria, erythema, edema, joint pains and swelling; abdominal colic, vomiting, melena, hemorrhagic nephritis.	Absent; Melena without colic and hematuria without nephritis do occur.
Skin lesions	Petechia, purpura, urticaria, erythema.	Ecchymosis, extensive suggillations, purpura.
Localization	Extremities preferred, especially near joints; head usually spared.	Irregular, frequently on head.
Mucous membrane hemorrhages	Moderate bleeding from gastrointestinal tract, otherwise rare.	Frequent epistaxis, stomatorrhea; uterine, vesical, gastrointestinal and renal bleeding may be extensive.
Bleeding time	Normal.	Increased.
Clotting time	Normal.	Normal.
Clot	Retractile.	Non-retractile.
Morphology of blood	Slight leukocytosis; occasional eosinophilia.	Tendency to leukopenia and relative lymphocytosis.
Platelets	Generally normal, may be increased or moderately diminished.	Marked thrombopenia with giant forms.
Tourniquet test	Positive	Very strongly positive with large ecchymosis.

Case report: Mrs. A. B., 62 years of age, was seen at the Deaconess Hospital, May 26, 1930. Before being admitted to the hospital, this patient had been ill for a period of six days. I saw her in consultation on her first hospital day and where she remained until July 7, 1930. She complained of excruciating pain in both her eyes as well as severe pain in her arms, hands, legs and feet. There was a deep beefy-red injection of the sclerae of both eyes, which had become affected simultaneously. A general uveitis seemed to be present. There was a plastic iritis with plastic exudates and some blood in the anterior chambers. A severe keratitis was also present, and the cornea of each eye had a dirty-gray appearance. The iris was bound down in each eye and could not be affected with heroic use of

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Springfield, May 18, 1932.

atropine used in solution, then in ointment and finally in powder form. At no time could the fundus be seen with any degree of satisfaction. The eyes were extremely painful. There was a much swollen condition of the extremities, which were covered with large areas of a port-wine or red-plush-upholstering color; many of these areas later broke down and became necrotic in character, with large sloughs occurring, which added to the difficulty in caring for the patient. There was a sensation of heaviness in the hands, feet, legs and arms. The patient remarked that she had been suffering from pain in the feet and ankles, accompanied by swelling, extending over a period of a year or more. Now the pain was of an excruciating character and even the slightest movement was extremely painful.

In a fairly active practice of twenty-five years, together with a residence in one of the larger special hospitals of our country and several months spent in observation of the clinics of the old world, it had never been my opportunity of seeing a case of this description, and I bring it to you as something of clinical interest.

Family history; the mother died of angina pectoris at 79 years of age; the father died at 81 of a paralytic stroke. Several brothers and sisters are robust and living. The patient stated that seventeen years ago she had an attack of neuritis affecting mostly the muscles of the neck and back, also the legs and feet; the limbs, feet and hands were swollen. This attack lasted between two and three years, during which time she had to use crutches. There was great weakness of the ankles and they would not bear her weight (about 200 pounds). She then walked with a cane for a year or so longer. For the next fourteen years she was greatly troubled with neuritis and could usually foretell oncoming stormy weather.

In 1916 "radium solution" was used in the veins on four different occasions. On May 21, 1930, the present illness began with a chill, and was diagnosed as "summer flu." There was a temperature of 102. She entered the hospital on May 26; was moderately delirious, and had a great deal of pain in the eyes, of which much complaint was made. Previous to entering the hospital she noticed that she could see very imperfectly and complained that everything looked like a fern leaf, and that the faces of her friends had a calico-like appearance. On May 24 blotches appeared on the dorsal surface of the feet, hands, legs, buttocks, forearms and shoulders.

Physical examination: a rather large obese woman, whose tonsils were large and gave evidence of past infection, but were not acutely inflamed. There were many purpuric areas on the skin of the feet, legs, thighs, buttocks, fingers, the back of hands and forearms. The face, chest and abdomen were singularly free from purpuric blotches. The feet and hands were swollen and the joints were extremely tender and painful; movement caused excruciating pain.

The woman had been treated for a week or more in the country and when I first saw her she had severe pain in the eyes with a severe iritis and keratitis, and the posterior surface of the cornea was covered with a grayish, creamy exudate that occurred in streaks. Besides the exudates in the anterior chamber of both eyes there were some streaks of hemorrhage. The iris of each eye was fixed and could not be dilated, although atropine was used most vigorously with the hope of securing mydriasis, but to no purpose.

Benedict[5] states: "The ocular signs of purpura are few. Rarely the lids are the seat of hemorrhagic deposits, although hemorrhages into the optic nerve and retina have been noted, as well as optic atrophy. Motolece[6] saw bilateral papillitis, with alternating convergent strabismus, from rheumatoid exanthematous purpura. The patient was a child three years of age. The day after the onset of febrile symptoms purpuric patches appeared on the skin of the abdomen and limbs and convergent strabismus developed. In one eye hemorrhages were associated with the papillitis." A number of writers speak of having observed small petechiae on the sclera and conjunctiva in cases of purpura. Retinal hemorrhages and conjunctival hemorrhages are frequently mentioned, but no case in the available literature which came to my hands, save one, reported eye symptoms at all commensurate with those observed in this case.

This patient was under observation for a period of forty-three days, during which time the disease rose to its acme, there being great distress in the joints of the hands, feet, knees and thigh. It was almost impossible to turn her, and in spite of vigorous use of salicylates, foreign protein and symptomatic treatment the condition seemed to go on to its own termination, a gradual restitution taking place.

In March, 1931, I removed the patient's right eye on account of persistent pain and continued degeneration taking place in the eyes, to the point of lack of either light perception or projection in either eye. She is now quite happy in her work of basket weaving, for which she has to thank the Illinois State Board of Health and its work of teaching the blind some form of occupation, without which life would be unbearable.

The eye specimen was sent to Dr. Sanford Gifford, Professor of Ophthalmology at Northwestern University Medical School, whose report is as follows: "The iris ciliary body and choroid all show a marked congestion. The veins are full of blood and there is round cell infiltration about a number of veins in the iris; some diffuse round cell infiltration in the iris stroma; some blood cells free in the uveal stroma, but no large hemorrhages are seen in the section examined. The choroidal

arteries show marked thickening of their walls. In the ciliary body is a large focus of round cell infiltration with a number of free red cells. Next to this is some new connective tissue containing thin-walled vessels. Apparently this represents a site of a larger hemorrhage which is being absorbed and replaced by connective tissue. The ciliary processes are edematous and hyperemic. This section is not cut through the pupil so the chamber angle cannot be described. I would appreciate a little more history on this case and we will send you a complete report when our celloidin sections are run through; this is the best we can do in paraffin."

After receiving the above report a second one was sent me by Dr. Gifford which gives the pathology through the anterior segment of the eye and was from a celloidin section. It is as follows:

"This section goes through the pupil and shows that the anterior chamber is almost completely obliterated. The iris is bound to the cornea and the lens capsule by newly formed connective tissue. The chamber angle on one side is completely closed; at the other side the canal of Schlemm is patent and there is a narrow anterior chamber. Just under the iris root at this side is a focus of fresh round cell infiltration. The cornea shows some infiltration near the limbus and edema of the epithelium. The iris is infiltrated with large mono-nuclears and a few polys. The lens shows some newly formed spindle cells under the capsule. The retina is completely detached. The choroid is much congested and shows some round cell infiltration. There is a dense cyclitic membrane behind the lens attached to the retina. There are some small hemorrhages in the ciliary body and the small vessels are much dilated.

"Summary:—The picture is one of chronic iridocyclitis with a secondary glaucoma and retinal detachment due to the formation of cyclitic membranes. There has also been some recent active inflammation. There is nothing distinctive about the picture which suggests a reaction to a blood dyscrasia except the marked congestion of the vessels and hemorrhages which might be present in any severe uveitis. Apparently the uveitis was due to some form of infection or the presence of toxic material in the blood stream."

In November, 1931, I removed the patient's tonsils, which showed evidence of chronic infection; she is of the belief that she feels better since that time.

Comment

There is no history of familial tendency to blood disease obtainable in this case. The most important elements were the acutely swollen and painful joints, purpuric spots on extremities, scapular and buttock regions. There was no tendency to excessive bleeding from the gums, nose or bowels. There was excessive tenderness over the abdomen, some distension, and a tarry appearance to the stools for several days.

This case was characterized predominantly by an arthritis with excessively swollen joints of the feet, hands, arms and legs, with red-plush-looking hemorrhagic areas, some of which developed necrotic spots. There was colic, vomiting, tarry stools, with moderate fever. Within the first twenty-four hours eye symptoms developed, which resulted in intraocular hemorrhage, iritis with dense corneal opacification and loss of vision in both eyes. In the previous attack mentioned which occurred fifteen years previously, there were no eye symptoms.

The patient at present seems well and happy in her work.

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DISCUSSION

Dr. Harry S. Gradle, Chicago: I am not surprised that even in as extensive a practice as we all know Dr. Clark has, he has never seen a similar case.

From a careful survey of the literature, it is my belief that this is the second that has been reported. The first case reported is that of Benedict, and it has been my good fortune to carry out this case to its conclusion. Six or eight years ago a young woman suffering with acute uveitis was seen by Benedict, and the etiological factor in the case was found to be a Schoenlein-Henoch purpura. Despite long continued treatment the cornea finally perforated and an enucleation of the eye became necessary.

About a year ago the other eye became similarly involved and in spite of all efforts at treatment the cornea perforated. I pulled a conjunctival flap over the perforation, and nevertheless, the condition progressed to a phthisis bulbi and today the patient is completely blind.

A second instance of uveitis due to Schoenlein-Henoch purpura occurred in my own practice. This patient, a young girl, fortunately had merely a mild exacerbation of the blood dyscrasia condition, with an accompanying uveitis of moderate degree. In this case the cornea did not become involved and the uveitis yielded promptly to foreign protein therapy.

More than a year has elapsed since that attack, during which time she has been entirely free from all symptoms.

Dr. Alonzo B. Middleton, Pontiac: I should like to ask Dr. Clark whether or not he found the intraocular tension was increased before the eye was removed.

Dr. J. Sheldon Clark, Freeport (closing): I thank Dr.

Gradle for his discussion of this paper. At the time I first saw this case, I knew I had a purpura, but did not recognize it as of the Schoenlein-Henoch type until about two months after finishing with it. I read all the literature I could find, and found that that fall, 1930, Dr. Benedict brought out the report of his case. I had not seen anything of the sort before and did not know of its rarity at this time.

The tension was not taken before removal of the eye, however it felt soft. At the time of the severe uveitis the tension was greatly increased.

THE CRIMES OF COOKING

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The accumulation of wealth by fair means or foul has recently led the world to the brink of financial ruin. Reckless speculation and excessive buying and selling on credit by the unenlightened mass in trying to keep up in the mad and merry pace have been prominent features. The remedy proposed by nearly all of our leaders has been and still is, "Open your purse, keep your money in circulation, spend your cash and all will be well," forgetting to add "until the rest of your money is gone." Should they not have said? "Adapt your living to the altered conditions. Forget the old high pressure methods and work your way back to the normal, instead of trying to bolster up the abnormal conditions a trifle longer."

I mention these facts as an appropriate introduction to a criticism of our increasingly complicated, luxurious and injurious habits of eating and drinking. The masses who eat such foods as many of our kitchens, restaurants, bakeries, canning factories and candy stores provide are unwittingly committing errors which, although they act more slowly, act more harmfully and in the end more hopelessly than those due to the ever recurring speculating and spending mania of the financial world.

To begin with the babies: their diet has, under the control of the medical profession, been scientifically planned and generally adopted, and the result has been a great reduction of infant mortality and morbidity. But a similar regulation of the diet of older children and adults has not been accomplished. Young people as a rule eat more than they can utilize, and the same may be said of nearly all hearty eaters. About 66 per cent. of all adults over 40 years of age who are ten pounds overweight show hypertension with an increased mortality rate in proportion to their excess of weight. A balanced reducing diet intelligently supervised is the largest single factor in the control of certain types of hypertension.[1] But it is not so much with quantity that I am concerned as with quality; not so much with single foods, nearly all of which are healthful, as with the combinations of foods as they are served.

The evils of overeating are an old story, but the evils due to the improper preparation of food, although known in a general way, are not well understood by those most concerned, viz., the eaters. The average eater selects from the food he finds prepared for him whatever he likes best. If it does not cause pain or distress within a short time he thinks that it has agreed with him, and does so again, and expects to enjoy a long life. But he awakes some fine morning in middle life or later, and learns that he has diabetes, nephritis, arteriosclerosis, angina pectoris, pernicious anemia or some other incurable ailment.

The foundation for many such diseases was formerly laid in infancy and early childhood; nowadays it is more often laid in later childhood and adolescence.

An illustration of the injurious qualities of our popular food mixtures can be found in a study of the composition and digestion of plain pound cake. The receipt is taken from the "Boston Cook Book" (Miss Ward's receipt).

It is a mixture of a pound each of flour, butter and sugar, with twelve eggs. Enough milk is slowly added to make a moist soft mass, which is stirred with a strong beating motion about two hundred times. Thus the eggs, butter and sugar are evenly distributed through the flour. Then the mass is put in a moderately hot oven for about a half hour with the result that the starch granules are coated over with firmly coagulated albumen and imbedded in the egg fat and butter fat. The starch cannot be acted upon until the mass has been penetrated by the gastric fluids, the fat separated from granules and the albumen liquefied so as to expose the cellulose covering to the action

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1. Annals of Int. Med., Ann Arbor, Mich., Feb. 1932. V. C. Rowland.

of the muriatic acid. All of this means delayed digestion, or indigestion, according to the amount eaten. Hence pathological changes may be expected to ensue. But the disturbed digestion has probably not been painful, and the harmful, incurable pathological results are slow in making themselves apparent.

Wedding cake has the same ingredients plus citron, almonds, raisins, two pounds of currents and two more eggs, and is condimented and conserved by nutmeg, cinnamon, allspice and cloves. Excepting the sponge cakes which have no butter fat, although plenty of egg fat, all kinds have a similar combination of ingredients in varying proportions, from fruit cake, nut cake, devil's food to angel's food, grandmother's cake ginger cake, and such puddings as plum pudding, suet pudding, fig pudding, cabinet pudding, boiled puddings, etc. Most of the ornamental bakery goods, from sweet rolls, cinnamon rolls, butter rolls, coffee cake to doughnuts and French pastry, are only a degree less complicated and injurious.

I have not much to say about meat, except that when taken in hash, stews, croquettes and other mixtures, the grease is often in such excess as to interfere with the stimulating action of the meat on the secretions of the stomach, and also to interfere with the functions of the secretions. This excess of grease also makes necessary the use of strong condiments. Ordinarily the requisite amount of proteins can be obtained from the dairy products, legumes and cereals. Modern man is omnivorous less for the necessity of eating meat daily than of enabling him to live in climates and seasons where all kinds of food, particularly meat, may not be available. His thirty-two teeth are all grinders and "gnawers," except the four blunted remnants called stomach and eye teeth.

What can be done to remedy these established styles of cooking and eating?

We must begin at the bottom and build upward. We must quit feeding to our young people so much sweetened and highly flavored food. It gradually destroys their natural appetite for the unmodified flavor of the cereals, vegetables and fruits. Statistics show that the average American eats ten times as much sugar as he did a hundred years ago, and I suppose that as some people do not eat more than half that proportion, others make up by eating about twice that much. Children could get all of the sugar they need in ripe fruit, mature vegetables and in milk. Desserts can be provided with but little artificial sweetening. When the time is unusually long between meals, one or two small pieces of candy, or one or two buttered or slightly sweetened crackers, or a cup of milk, will usually carry them through comfortably.

When I was a child and was hungry between meals I was given a slice of bread and butter, and I liked it. But my mother died when I was ten years old, and after that I bought bakery sweets, candy, cookies or ice cream or soda water between meals, had become a confirmed dyspeptic at 18 and, for a long time afterwards, had to make use of my professional knowledge and appeal to that of my colleagues to rescue me from the results.

But while cooks and mothers are what they are, what can we do with the food as it is set before us?

1. Never overeat.
2. Reject highly condimented or excessively sweetened foods. Salt is almost the only normal condiment for starchy food.
3. Since slight sweetening of starchy food makes us eat more of it than would otherwise be relished, we should depend upon salt instead.
4. Reject very greasy foods. Fat is too concentrated to be eaten in large quantities, since sugar has become such an abundant ingredient of our daily food that we do not need as much fatty food.
5. Reject complicated mixtures.

As an illustration of the feasibility of a diet based upon these suggestions, I offer a bill of fare which represents what and how I have eaten for two consecutive years,—and I am still following the plan and relishing my meals. Daily changes were slight and did not affect the nature of the food nor the method of eating.

About an hour before breakfast the juice an orange or ripe lemon or grapefruit, or some tomato juice,—and a glassful of water.

Breakfast:

(Each course to be finished before the next one is started.)

1st Course: Cup of half coffee and half hot milk.

2nd Course: Unsweetened breakfast food with evaporated milk. I have usually mixed two parts of puffed wheat with one part of shredded wheat. Sometimes I ate plain oatmeal or popcorn or grapenuts.

3rd Course: Dried, brittle toast or heated wheat muffins or hard rolls or rye rolls, with butter or Philadelphia cream cheese as a spread.

4th Course: Coffee and hot milk, about half and half.

5th Course: Soft or medium boiled egg (irregularly).

6th Course: Fruit.

The division of the meal into so many simple courses is for the purpose of preventing interference of acids, or sweets, or fats or fluids with the mastication of the starchy food. If I used butter it was never allowed to melt on or into the toast or other starchy food.

Midday Meal (Dinner):

1st Course: Soup (without bread or crackers) in cold weather. Vegetable salad in hot weather.

2nd Course: Fresh meat (cooked without an excess of grease) or a protein salad. Boiled, baked or creamed potatoes and two green vegetables cooked without grease.

3rd Course: Dessert,—light puddings, or custard, ice cream, ripe unsweetened fruit in season, crackers and cheese, nuts.

4th Course: After dinner coffee.

Evening Meal (Supper):

1st Course: Either soup or vegetable salad. Both were often served by making a course of each.

2nd Course: Poor man's rice pudding, unsweetened and made with skim-milk, and served with warm evaporated milk as a sauce. The slight taste of milk sugar developed in the pudding and evaporated milk gives a suggestion of sweetness without diminishing the natural flavor of the rice.

3rd Course: Toasted bread or a heated plain white roll, rye roll, or white flour muffin. I used cream cheese as a spread, or a small piece of Emmenthaler cheese when I ate a rye roll. I have usually rejected bread, rolls and muffins made with corn meal, bran or whole wheat flour when I detected the taste of sweetening and shortening.

No sweets are taken with the evening meal.

If I had been in the habit of retiring late and very busy in the middle of the day, I naturally would have taken the dinner in the evening and the light meal in the middle of the day.

Because sweets are stimulating and liable to ferment and cause discomfort, I have attributed my ability to retire early and sleep well largely to the fact that I took nothing sweet, not even fruit, with or after my evening meal nor at bedtime.

There are many kinds of meats, vegetables, farinaceous foods, and light desserts that can be substituted to give variety to this kind of diet without changing its character. Amounts can be increased or decreased according to individual requirements. My regulations were not based upon the kind or value of each food, but upon the *interference* with *digestion* and *assimilation* caused by complicated mixing, cooking and flavoring,—and by faulty eating habits.

Such a general smplification of the diet would put many chefs, restauranteurs, fancy bakers, novelty canners, and street vendors out of business, but it would save our children for a healthier, longer and more vigorous old age. When eating at restaurants the principle can be fairly well carried out by eating only one at a time of the foods or kinds of food served and leaving the mixtures.

However, as few people could or would eat just as I have recommended, I wish to call attention to a method that, although well known, is generally neglected by human beings. We have an illuminating example of it in our barnyards.

The cow can gather and prepare enough raw food material to nourish herself and have an abundance left for our nurseries, hospitals, hotels, canneries, cheese factories, etc. This is made possible by prolonged chewing of the cud or bolus, which insures a perfect first stage of digestion and makes more effective the other steps. But the cow gives to the performance much of her time and all of her attention. She does not believe, as does the educated human being, that an appetizing talk is better for digestion than silent enjoyable chewing.

Fletcher had the right idea about chewing, but he died trying to prove it. He had a perfect precedent in the cow, and also in the horse, but failed to recognize his human limi-

tations and became a martyr instead of a reformer. It may be true that I exaggerate the necessity of mastication, but I feel sure that I do not exaggerate its usefulness.

Let us see what Fletcherism can be made to do to a piece of pound cake. Prolonged chewing can be made to moisten and disintegrate the coagulated mass of albumin, fat and cane sugar, and thus expose the cellulose starch capsule for immediate disintegration in the stomach by the hydrochoric acid. Thus the long delay in the stomach that ordinarily follows the hasty swallowing of pound cake is avoided, and a more complete digestion secured.

Habitual, prolonged Fletcherism activates our more or less atrophic salivary glands and increases their power toward doing for cooked food what chewing the cud does for raw food.

But the immediate outlook for our children with their pennies and nickels is discouraging. Our only hope is to teach young children at home and at school lunches that such things are harmful, and not allow them to buy or eat them.#

One of our greatest needs is a thorough reform of the cook books. They should be revised upon scientific principles. They should contain a preliminary discourse upon the main facts of digestion and how cooking can be made to aid digestion. They should teach something about incompatibility of mixtures, both the cooked and raw. They should teach something about the proper, beneficial use of flavors instead of making a luxurious lure of them.

Baking and canning for public sale should be regulated by law, and a list of the ingredients used be available to all who pay for the goods.

But how can we get any enjoyment out of life if we give up so much time to chewing and so much study to choosing?

Each meal should have time to be eaten. Each cereal, when properly prepared, has a characteristic agreeable flavor, and the same is true not only of ripe fruits but of vegetables, meats, nuts, etc. An hour spent three times a day chewing them should be an anticipated pleasure as well as a comforting assurance of the enjoyment of better health in later life. The idea of making coffee, tea, or other wholesome drink a full course at the beginning, end or, if desirable, in the middle of a meal, is not only to prevent the swallowing of imperfectly masticated food, but to give the table wits a time for their talk. The habit of telling jokes with the mouth full of food is all too common when good fellows eat together.

Breakfast Cereals. Breakfast cereal foods have become popularized by means of cunningly phrased and misleading advertisements until the gullible public would be better off if it had none but the old reliable oatmeal, hominy, popcorn and cornmeal mush of former times. Their greatest improvement consists in the convenience of having them put up ready to serve with or without a little warming.

1. The best breakfast cereals are those to which no fat, sweet or artificial flavor has been added except a minimum of chloride of sodium.

2. The best available test of the digestibility of the foods sold "ready for eating" consists in chewing them dry while the stomach is empty. The best prepared cereals will hydrolize in the mouth the quickest, the particles of the hull remaining for a little more grinding and maceration.

3. Popcorn, which is a rough model for the dry breakfast cereals, is the exploded kernel to which the starch, liberated from its cellulose cover, clings. Upon being chewed dry without butter, the starch is hydrolized almost immediately, leaving the hull to be mashed and macerated by more chewing and then sent to the stomach for quick action of the hydrochloric acid.

4. Neither sweetening nor other artificial flavoring should be added to breakfast cereals by the manufacturer or eater. The characteristic natural flavor of each cereal adds to variety of food and is a guide to the appetite and an aid to digestion. Sweetening not only weakens the natural stimulating flavor of cereals upon the enzyme but it excites an abundant flow of watery secretion that weakens the enzyme action. The place of sweets in a normal diet is at the end of a meal, or between delayed, or too widely separated, meals as a tiding-over stimulant.

First Principles of Eating

1. Moderation, Simplification, Mastication. Moderation favors the development of a re-

We spend over $300,000,000 a year for sweets and the nickel candy bar gets the biggest share.

curring animal appetite, better called normal hunger. It teaches us *when* to eat.

Simplification separates the kinds of foods and serves them with their natural flavors. It teaches us *what* to eat.

Mastication facilitates digestion by disintegrating and preparing the food for the stomach. It teaches us *how* to eat.

2. Occasional abstinence from a want of appetite is more conductive to a long and vigorous old age than the habit of eating without an appetite for fear of missing or skimping a meal.

3. Chewing one kind of food at a time is the simplest way of preventing a mixing of interfering flavors or of incompatible foods.

4. Choose and chew! When you can't choose, chew! When you can't chew, choose!

5. Excess and error in our eating habits require reform as much as do the disastrous and complicated business methods of recent times. The results of such eating are less sensational and less suicidal, but they shorten our lives none the less.

6. The physician in recommending a diet is too much concerned with the addition and subtraction of calories; the cook is too much concerned with the multiplication and division of flavors; the eater is too unconcerned.

7. Health is more than strength; longevity is more than senility; disease is more than death.

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THE THERAPEUTICS OF SULPHUR

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Sulphur occupies a preeminent place in the materia medica; its healing qualities have been known and appreciated for many hundreds of years. As a matter of fact the beneficial effects of sulphur as found in natural springs, were recognized long before sulphur was put into active form by means of chemophysical processes. Such sulphur springs as Aix, Amelles les Bains, Bagnere de Luchon, Bonne (France); Harkany, Herculesbad, Mehadia and Treplitz-Trencsen, Potyen (Hungary); Ischl, (Austria); and Mount Clemens (Michigan) have established reputations as being highly effective in the treatment of rheumatic and arthritic conditions arising from infective or metabolic causes.

Sulphur is found in intimate association with life. It forms an integral part of all albuminoid molecules. Its presence is necessary to the life of the cell just as are carbon, hydrogen, oxygen or nitrogen. It has been found that the sulphur of the proteid molecule may exist under the form of organic sulphur such as mercaptan or as oxidized sulphur. It has also been found that most protein matter contains its sulphur almost exclusively in the form of cystin or cystein. Sulphur is found in the liver under the form of taurine which is formed by the breaking down of proteins. A combination of taurine and cholalic acid forms one of the biliary salts. Sulphur forms an integral part of oxyhemoglobin in which it exists in a higher proportion than iron. Melanine is a sulphur compound.

Experimental or functional suppression of the suprarenals causes an increase of sulphur in the blood, the increasing concentrating the neutral sulphur most exclusively. Beginning with hydrogen sulphide many transformations occur consisting of more or less complete oxidation. Completely oxidized sulphur is of no value to the organism and can only be eliminated. Hence the presence of cystin, which is unstable, in the albumins is very important. The cystin in the albuminoid molecule appears to be in relation with nutritive phenomena. Sulphur is present in every cell, and in the hydrogen sulphide of the protein building stone, cystin, which is present in most animal proteins, especially in the horn substance. Furthermore, sulphur is present, combined with protein in the ethereal sulphuric acid of chondretin, as in bone cartilage. It is also found in the acid salts of saliva. In cystin sulphur assumes an active part in the intermediary metabolism. Cystin takes on very easily two molecules of hydrogen and forms cystein.

The pharmacological effects of sulphur are connected with the relations of sulphur to hydrogen and oxygen. The formation of hydrogen sulphide is most important, since in this form sulphur is most readily absorbed. In the blood sulphur is partly oxidized to sulphates, and partly eliminated unchanged by the skin and lungs; in the brain the sulphur content appears to be increased after the application of sulphur. In the skin it forms alkali sulphides. Hydrogen sulphide is capable of dissolving elementary sulphur, forming polysulphides (H_2Sx); these polysulphides are resorbed and enter the blood or in the cells, give up the

excess sulphur, which can then in these ways be oxidized or reduced.

As was stated in a previous paragraph, sulphur is one of the oldest drugs at our disposal. It was highly esteemed by the peoples of antiquity. The Greeks termed it theriou, which meant devine. Homer recorded in his poems that sulphur was of great value in overcoming a skin disease with which Heracles was afflicted. In the 16th book of the Iliad it was praised as a deodorizing agent. Similarly, in the Odyssey, it was used to purify the air in the halls of the palace after the suitors of Penelope had been put to the sword.

In Rome the value of sulphur in the use of diseases of the skin was understood. Pliny, Ovid and Virgil spoke of sulphur in the treatment of skin diseases in sheep. When Galen wanted to treat his patients with sulphur he sent them off to Vesuvius to inhale the vapors. Dioscorides and Pliny advocated sulphur in the treatment of bites inflicted by animals. In 1546 Fractorius recommended it in the treatment of syphilis.

Sulphur is perhaps used more widely in diseases of the skin than in any other condition. When sulphur is applied to normal skin it produces an increased but incomplete epidermal keratinization with a definitely marked dilitation and thickening of the vessels of the papillary layer. There is a very slight leucocytosis, particularly of mononuclear cells. The chemical reaction responsible for this phenomenon is explained on the basis of the sodium chloride of the serum, which oxidizes the sulphur to form sulphuric acid. In this way the greater the concentration of sodium chloride in the serum the greater the activity of the sulphur.

Many years ago Unna demonstrated that loosely bound sulphur exists only in cells of the skin having undergone complete cornification. Thus, sulphur applied to the skin in dermatoses in which there is a deficient or incomplete kernatinization, as seborrheic dermatitis, pityriasis rosea, psoriasis, etc. in which parakeratosis is an important factor, should act as a corrective agent. This is called its keratoplastic action which next to its antiparasitic action is the most important property that sulphur possesses.

The chemistry of the keratoplastic action of sulphur can briefly be stated here. It depends upon the ability of hydrogen sulphide to combine with sulphur to form the polysulphides which had been mentioned previously. These further combine with oxygen producing thiosulphates. The organic sulphur compounds found in the epidermis also have a tendency to combine and form sulphur compounds, such as cystein and cystin. This acts as an aid to normal cornification.

Sulphur applied in the form of a powder, a lotion, or an ointment has been used with success in quite a few skin diseases. It has demonstrated its worth in acne vulgaris, scabies, rosacea; in the various pyodermias, boils, carbuncles, furuncles and impetigo contagiosa. In the pus forming skin lesions sulphur acts by withdrawing moisture and oxygen from the tissues in this way rendering conditions less favorable for bacterial growth.

Sulphur has also been used in other skin diseases. Paschkis has used it in ichthyosis and pigmentary diseases, and Stelwagon recommends it in lupus erthyematosus. Shoemaker believes that sulphur is of value in psoriasis and pediculosis. Sabouraud advocated it in affections of the follicles; Crocker claimed good results in localized hyperdrosis with the internal administration of a drachm of precipitated sulphur three times a day. Walker recommended sulphur in erthyema multiforme, and Hardway obtained good results in dystrophies of the nails. Trimble uses sulphur in the form of an ointment in sycosis vulgaris.

In addition to the local application of sulphur ointment, lotion or powder, sulphur baths have been known to exert remarkable effects in skin diseases. The sulphur is absorbed both by the skin and by inhalation. Sulphur baths for syphilis were recommended as long ago as the sixteenth century. Such modern authorities as Julinsberg, Elsner, Emery Landouzy and Desmoulieres are enthusiastic over the results obtained in syphilis from sojourning at sulphur spas.

Within more recent years the internal administration of sulphur for various diseases has been recommended. A prominent application in this direction is the intramuscular injection of sulphur in the treatment of articular disease. This was first used by the French and introduced into Germany by Meyer-Bisch. By this means improvement in many cases of chronic arthritis has been noted. The solubility of sulphur in glycerine or oil and its intramuscular injection has recently become established as a favorite treatment of joint disease. After an injection of 5 to 10 cc of a 1% solution of sulphur there is a considerable increase of excreted sulphur in the urine as

compared with the amount introduced. It has been found that after a sulphur injection the extra-renal water secretion increases considerably at the expense of the renal. In summarizing the metabolic changes which take place after an injection of 5 mg of sulphur we may say the following: The nitrogen excretion is not increased; it even shows a slight diminution. That there is a change in the intermediary protein metabolism is demonstrated by the absolute and relative increase of neutral sulphur excretion. In the urine there appear glycuronic acid and urobilin in greater amounts. These metabolic processes are accompanied by a retention of water and salt which causes a loss of weight and changes in the blood serum and an increase of NaCl within the serum.

Clinically the injection of sulphur presents the same picture as the action of certain protein bodies. This holds good for small as well as large doses. In the latter the general condition is more influenced and the temperature is much higher than, as for example, in the injection of milk. As a rule, after the injection of sulphur, as after the injection of protein bodies, sharp pains appear in the diseased as well as in the healthy joints. As for the local action of the sulphur, there appears after the injection a sort of decomposition of the specific materials of the articular cartilage which is manifested colloid-chemically in the diminished swelling of the cartilaginous tissue. This process demonstrates a transformation of the substances in the joint, in this manner explaining the therapeutic action of the injected sulphur. An examination of the sulphur contents of the blood and exudates after an injection of sulphur demonstrates that there is a fall in the blood and a corresponding increase in the serous cavities.

Maillard and Robin have demonstrated still further that sulphur is therapeutically indicated in chronic muscular and articular rheumatism, and that in these conditions there is a disturbance of the organic molecular harmony through certain loses in the system which the sulphur supplies. Many other investigators have reported good results with sulphur injections in arthritic conditions.

Hayn emphasized the advantages of systematic sulphur treatment in all chronic joint affections that do not yield to the salicylates. Hayn used an intramuscular injection of an emulsion of 1 part of sulphur depuratum and 20 parts of eucalyptol in 80 parts of olive oil. He used this in a series of cases of arthritis deformans. In these cases a chill followed the injection in about twelve hours, with fever, headache and pains in all the joints most affected. These symptoms all subsided within 24 to 48 hours. All his cases showed remarkable improvement.

This property of sulphur when injected to cause a rise in temperature has been taken advantage of therapeutically. In 1927 Schroeder of Denmark reported excellent results following the injection of sulphur in the treatment of paresis by hyperpyrexia. The intramuscular injection of 5 cc of a 2% suspension of sulphur in olive oil was followed in about six hours by a temperature ranging as high as 104°. This began to fall after a while.

The artificial induction of fever as a therapeutic measure in peripheral vascular disease has also been well demonstrated. Waller and Allen reported a series of cases in which they used a 2% solution of sulphur in olive oil. Observations were made on pain at the site of injection, on relief of pain in ulcerated or gangrenous regions, on healing of ulcers, etc. The most satisfactory results were obtained in doses in 1.5 or 2 cc. It has been found that sulphur in olive oil, injected intramuscularly, in the treatment of peripheral vascular disease, is most satisfactory for persons of advanced age, for those who are resistent to treatment by vaccines, and for those in whom the pain from the injection is not excessive.

Another application of intramuscular sulphur therapy has been made by Lasch who found that nonspecific intramuscular treatment with sulphur is beneficial in asthma and gives results in aged patients closely resembling those following specific desensitization. Cases of bronchial asthma, with relatively free intervals, have a much better prognosis than those with permanent dyspnea and paroxysmal exacerbations. Lasch's technic is to inject 2.5% sulphur preparation, obtained by rubbing up precipitate sulphur 0.25 in 100 grams of sterile olive oil. Injections are given twice weekly. The course of treatment consists of ten injections, the first eight of 1 cc.; the last two of 0.75 and 0.5 cc. If five injections show no noticeable improvement, the treatment can be interpreted as hopeless.

When more intense and quicker action is desired sulphur may be injected intravenously. When this is done the following takes place: The sulphur combines immediately with the hydrogen present in the body, hydrates

and sets free an ionized active form of oxygen to react with the body constituents. This occurs according to the formula:

$$S + 2H_2O = H_2S + O_2$$

This oxygenation process starts during or immediately after the injection and goes on simultaneously with the excretion of metamorphosed sulphur in the form of hydrogen sulphide through the respiratory channels.

In this brief resume of the important indications of sulphur in treatment no attempt has been made to include all or nearly all of the uses of this very important element. Sulphur is of such vast importance in therapeutics that a review of its more important uses is never amiss.

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SOME RESPIRATORY MANIFESTATIONS IN CIRCULATORY DISEASE.*

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The circulatory system is the greatest contributor of clinical surprises, and, apart from cardiac pain and occasional abdominal manifestations, they are usually mirrored as respiratory phenomena.

The process of supplying oxygen and removing carbon dioxid from the tissues is brought about in a two-fold manner: by the interchange of gases between the blood and external air—external respiration, and the interchange of gases between the blood and the tissues—internal respiration. The latter depends upon the quality of the blood and the rate of its flow, both governed by the integrity of the circulatory apparatus. In a clinical sense then the organs of respiration and circulation are mutually inter-dependent and may be regarded as a circulatory-respiratory unit.

The respiratory centre is influenced by efferent vagal nervous stimuli (a negligible factor) and mainly by the composition of the blood—its oxygen and CO_2 content.

Normally the respiratory rate is evenly uniform and varies from eighteen to twenty-four per minute.

In senile and exhausted hearts it is often interrupted by irregular loud sighing. Looked upon at one time as a sign of myocardial insufficiency it is now regarded as an expression of fatigue and excessive nervous excitability. In the young without any determinable etiology or pathology it is purely neurotic, probably in the nature of a habit-tie and is a frequent cause of unfounded anxiety.

Some years back I had under my care a strapping young woman whose respiratory rate would jump to sixty per minute at the approach of the physician. Severe tachypnea, with rates of one hundred or more, without dyspnea, have been repeatedly observed in healthy young soldiers during the World War. Usually transient, they may be, if prolonged, lead to alkalosis.

In neurocirculatory asthenia a nervous dyspnea may occur due to abnormal excitability and over stimulation of the respiratory centre.

I have often noted in the exhausted hearts dyspnea with marked over work of the alae nasi without cyanosis, or any subjective discomfort. In effusive pericarditis, in my experience, it is a frequent forerunner of the clinically determinable effusion, especially when accompanied by a marked pallor.

On the other hand the periodic or Cheyne-Stokes breathing is found in the graver cardiopathies.

It is a phasic variation of alternately waxing and waning respirations with apneic periods, frequently accompanied by muscular twitching and loss of consciousness during the apnea. Found commonly in cardiosclerosis, renal or arteriosclerotic, in coronary disease and aortic regurgitation it is often accompanied by auricular flutter, fibrillation, and more often, as pointed out by Mackenzie, by pulsus alternans. Cheyne-Stokes breathing is caused by exhaustion of the respiratory centre from want of oxygen (Haldane and Poultoon). Carbon dioxid accumulates in excess and abnormally stimulates the respiratory centre, a disturbing hyperpnea sets in, the excess of CO_2 is ventilated off, anoxemia of the centre with its resultant apnea reappears and CO_2 accumulates again. The cycle is repeated. In a mild form it may occur only at night during deep sleep. When severe it may be continuous, night and day, most distressing to the patient, and defying all the therapeutic efforts of the physician.

The phenomenon spells grave cardiac exhaustion and is a frequent forerunner of death

*Lecture delivered to the internes of Cook County Hospital, October 18, 1932.

—a few days or a few weeks at most. Cases surviving a few years have been observed. Strychnia, warmly recommended by Eyster, was found useless by Means and Edsall, who proved that even large dosage hardly raises blood pressure above ten points. As a cardiac stimulant it is worthless. Atropine is of value. Morphine, theoretically contra-indicated on account of its depressing effect upon the respiratory centre, is in practice the most valuable remedy, especially when combined with atropine. In some cases coramine seemed to me to be of distinct benefit. Inhalations of CO_2, oxygen, or a mixture of both, give good results. Digitalis to improve cardiac tone, and chloral hydrate for the sleep, so frequently disturbed in these cases, are indicated.

Dyspnea, usually cyanotic, is the earliest, most trustworthy manifestation of myocardial weakness from whatever cause. It is especially significant when it appears after exertion, that previously could have been comfortably performed and when associated with pulmonary congestion. Various explanations have been offered; insufficient ventilation of pulmonary alveoli, increased pulmonary volume and decreased elasticity, and an acid intoxication (Lewis) with a lowered CO_2 alveolar tension. Out of the entire mass of argumentative evidence two facts remain: a diminished elasticity of the pulmonary alveoli and a retardation of the flow of blood. Its prognostic significance depends upon the ease with which it is provoked and its response to treatment; with rest—always, with digitalis, if necessary, and oxygen, when severe.

When the dyspnea is severe the patient assumes an upright posture; he may try to get out of bed and spend night after night in a chair leaning forward on the bed or resting on its back to secure some relief and much needed sleep.

At times an over-zealous physician, ignoring the pleadings and protests, orders the patient back to bed, little realizing that the orthopnea is an adaptive measure.

In the upright posture the flow of blood to the right heart is diminished and the cerebral venous congestion is relieved for the respiratory centre is raised above the meniscus of the column of the blood in the jugular veins. The external pressure of the bed is removed, the intra-abdominal pressure is diminished; a mechanical load is thus lifted off the diaphragm and the intercostals; the pulmonary congestion is relieved and the vital capacity is increased.

It is good physiology to permit the orthopneic patient to assume whatever posture best secures for him ease and sleep.

In acute coronary occlusion, besides the agonizing pain, dyspnea is the next prominent symptom. Usually moderate, it may be so severe, that the mere change of posture renders breathing intolerably distressing. Frequently it is paroxysmal, entirely apart from any exertion, more often nocturnal and lasting days or even weeks.

There is a rarer type of acute coronary thrombosis which may justly be termed dypneic. The pain is slight or entirely absent. The attack sets in suddenly with great respiratory distress and severe prostration. The dyspnea is unusually severe, unduly prolonged, and difficult to relieve; it may be accompanied by asthmoid wheezing or fine bubbling rales.

Another type of dyspnea, paroxysmal in character, so-called "Cardiac Asthma," common in cardio-renal cases, coronary sclerosis, and especially in syphilitic aortitis with or without aortic regurgitation, occurs at night with great suddenness and may be accompanied by moist or whistling rales and even spitting of blood. Sudden increase in the intraortic pressure, weakness and overfilling of the left ventricle and pulmonary engorgement were all advanced in explanation of its modus operandi. Quoting Mackenzie, however, we are not at all sure, that cardiac asthma may not arise from the apneic stage of Cheyne-Stokes breathing. The age of the patient, the misplaced apex, the hard pulse, and the frequently associated gallop rhythm or pulsus alternans should prevent us from the not uncommon error of labeling it as bronchial asthma. The outlook is always grave. Death may result with systolic and diastolic pressures remaining high till the very end. Nitrites and alcohol may relieve the milder attacks. Morphine and atropine rarely fail, and inhalations of oxygen are highly recommended. In the plethoric with a high tension pulse, venesection is advisable. Adrenalin should not be given. To prevent its frequent occurrence Marvin recommended intravenous

injections of 50cc-100cc of 50% solution of dextrose.

Summing up the functional respiratory disturbances; dyspnea, orthopnea, cardiac asthma, and Cheyne-Stokes breathing we find them compensatory measures aiming to remove the excess of CO_2 resulting from want of oxygen in the respiratory centre.

This lack of oxygen in all likelihood is due to weakness of the left ventricle.

Welch, working under Cohnheim, produced experimentally weakening of the left ventricle with the following chain of events: depletion of the systemic arteries and venous surcharge with increased pressure in the filling veins, increased capillary tension, loss of the alveolar elasticity, leading to pulmonary congestion and edema. The congestion may be very slight, just moist rales, persistent along the bases, more often along the left. A very valuable sign in the bed-ridden, chronic diseases and acute infections, indicative of beginning of weakness of the left ventricle. It may be marked, giving impaired resonance, rales and suppressed breath sounds, the so-called hypostasis, and when combined with a rise in temperature and an accelerated respiratory rate deserving the justifiable diagnosis of hypostatic pneumonia. The congestion may be even more extensive leading to hemorrhages.

The latter are especially common in mitral stenosis. I have encountered it twice in the post-pneumonic ulcerative aortic endocarditis. In the plethoric hypertensive patient or in a long standing emphysema with asthmatic bronchitis a brisk hemoptysis may be due to a rupture of a sclerotic pulmonary blood-vessel (Sir Andrew Clark). The hemorrhage may be slight or threatening. Depletion with hydragogue catharties and digitalis aim at relieving the pulmonary engorgement and strengthening of the left ventricle. Morphine, rest and the ice-bag are essential. Wiggers maintains that the pituitary extract diminishes the inflow of blood into the right heart chambers, thus lessening the pulmonary pressure, and is the drug par excellence in pulmonary hemorrhage. This is not universally accepted. In two of our cardiac cases pituitrin almost magically controlled the severe bleeding.

A priori in severe threatening pulmonary hemorrhage, venesection ought to be resorted to, for clinically we are familiar with the fact, that hemorrhage occurring in auricular fibrillation with gross pulmonary engorgement often brings considerable relief.

The hemorrhage may prove fatal if a large blood vessel is eroded by aneurysmal pressure. Rarely an aneurysm may rupture directly into the lungs or upper air passages.

Quite another source of pulmonary hemorrhage is pulmonary embolism with infarction. It occurs in valvular disease, especially mitral stenosis, right sided malignant endocarditis; very commonly in the cardiac subacute bacterial endocarditis and from thrombi in the cardiac chambers and pulmonary artery. It is not uncommon in infective thrombophlebitis of the peripheral vessels and, at times, according to Connor, in the apparently well.

Another possible source at present is the popular administration of quinidine in auricular fibrillation. Yet I have frequently seen embolization in auricular fibrillation treated only with digitalis in moderately large doses. Emboli are not uncommon in abdominal and pelvic operations. Many a so-called postoperative pneumonia is in reality either a pulmonary massive collapse or pulmonary infarction.

Acute coronary thrombosis is a frequent cause of emboli. In myomalacia cordis the chambers are dilated, their contractions are weak and inefficient; blood stagnates, thrombi form, and with the improvement of the cardiac tone, the thrombi are dislodged; pulmonary infarction may result. When the coronary thrombosis is not recognized a diagnosis of pneumonia is erroneously made. Indeed, it is an embolic pneumonia.

The symptoms depend upon the size of the blocked artery. There may be none. Usually pain and cyanosis of varying intensity are followed by spitting of bright red blood. The classical physical findings—medium-sized bubbling rales with or without impaired resonance, at times involving a whole lobe, usually a lower, are as a rule, less diagnostic than the symptoms. The prognosis is always uncertain, but by far graver in the peripheral thrombophlebitic cases, where sudden death is not unusual.

The presence of an etiologic factor, the absence of the chill, the fever, delayed for a few

days, the pureness of the expectorated blood, the absence of bronchial breathing and feeble breath sounds from the very first, with a rapid evolution of the disease, differentiate it quite easily from a pneumonia. In some cases of pulmonary infarction, however, where a whole lobe or a large part of it is involved and is complicated by a dry or effusive pleurisy, its differentiation from pneumonia is difficult. It may also simulate a hydrothorax.

In congestive heart failure the pleural transudate, while usually bilateral, may be unilateral, usually right sided. The dull, to flat note on precussion, basal in location, usually bilateral and nearly symmetrical in extent, even in the presence of rales due to congestion or compression of the underlying lung, make its recognition easy. It is good practice in the presence of respiratory distress and cyanosis, if the hydrothorax is at all extensive, to tap early, first one side, then the other, even before digitalization is begun.

In some cases of mitral stenosis the right sided hydrothorax persistently recurs and requires frequent tapping.

In Pick's adhesive mediastinopericarditis a rightsided hydrothorax from compression of venae azygos or the vena cava inferior may be an early clinical manifestation. It is likely to be mistaken for an effusive pleurisy and the considerable enlargement of the left heart for a displacement.

The liver, however, is considerably enlarged and hard, the specific gravity of the fluid is that of a transudate, the fluid repeatedly refills, and tapping does not change the position of the heart.

One need only call attention to the compression findings in the left chest posteriorly in effusive pericarditis. The marked dullness over the left lower base, the bronchial breathing, at first only at the angle of the scapula, later may be extensive and the not uncommon presence of rales, simulate quite closely a pulmonary consolidation, for which it is quite often mistaken.

The history of a previous rheumatic infection, or evidence of an endocarditis, should put us on our guard; the absence of the expiratory grunt and the marked pallor call for a careful search for a pericardial rub; and a painstaking percussory outline of the precordial dullness will as a rule prevent the diagnostic error. In doubtful cases, the fluoroscope will be of considerable aid.

A frequent sequel of ventricular weakness, dramatic in its onset and threatening in its course, is an acute suffocative pulmonary edema, coming on suddenly with alarming symptoms of oppression in the chest, dyspnea, orthopnea, cyanosis, incessant short cough, cold clammy sweat and a profuse frothy pinkish sputum, ending either fatally or subsiding, merely to recur again at a variable interval. It occurs in the hypertensive cardiorenal cases, coronary sclerosis, is frequently associated with acute coronary occlusion and in my experience, quite commonly in women with mitral stenosis, especially when associated with pregnancy.

Its mechanism is not understood. Landis regards it as angioneurotic, Bishop anaphylactic, Sahli and Krehl think it is due to changes in the capillary wall, functional or inflammatory. Loeb maintains that it is due to overstrain of the left ventricle—since he experimentally produced pulmonary edema in animals by adrenalin injections. The most acceptable view is that of Hare, that pulmonary edema is due to increased capillary tension, accompanied, aided, or preceded by degenerative and toxic changes in the capillary endothelium. Pathologically it is due to an outpouring of a serious exudate into the alveoli and interstitial tissues with considerable albumin in the expectoration.

The threatening dyspnea, frothy pink sputum, bubbling rales, the age of the patient, the markedly enlarged heart, or the presystolic murmur, which may be faint during the attack, at a glance differentiate it from bronchial asthma, the commonest mistake made, and its proper recognition is all important for upon it a life may depend.

Prompt venesection, unless the pulse is weak or the hemoglobin is below 60. In such cases Von Tabora and Fornai suggested bandaging the arms and legs to prevent and lessen the inflow of blood into the right heart; vasodilators in effective doses. Strophanthin, 1/200 of a grain intravenously, if we are *absolutely* certain that no digitalis has been administered very recently for otherwise death may ensue. Morphine and atropine are always of great help; and in the plethoric with a hard pulse croton oil under the tongue serves well. Sur-

geons' aid was called upon for the relief of the recurrent forms of mitral stenosis and slitting of the mitral valves was performed in experimentally produced mitral stenosis, with results hardly promising. The prognosis, always uncertain, is especially grave in pregnant women with mitral stenosis and in cardiorenal cases with a weak pulse.

Quite often asthmatic bronchitides are associated with hypertensive and nephritic cardiopathies; they may be especially severe in cases of mitral stenosis, which is likely to be missed during the height of the asthmatic attack. These bronchitides do quite well with rest, purgation, and digitalis.

The association of pulmonary tuberculosis with cardiac disease is not common. It is quite rare in mitral stenosis. Yet one occasionally sees an indisputable case with tubercle bacilli in the sputum and marked radiographic findings.

An aortic aneurysm by pressure upon a bronchus amy produce a syndrome quite indistinguishable from pulmonary tuberculosis —the so-called aneurysmal phthisis.

In closing let me reiterate that every possible pulmonary finding; congestion, compression, consolidation, hemorrhage, pleural effusion, may be part and parcel of a cardiac or vascular disturbance.

It behooves then the careful clinician to examine carefully the cardiovascular system in every patient with pulmonary symptoms.

FLUID BALANCE

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In discussing fluid balance, I have chosen one topic which is most familiar to a Temple University graduate. Much work has been done and is being done both clinically and experimentally at this school. To Dr. Temple Fay goes much credit in the decreasing of mortality in head injury cases. The dehydration theory, which is not new, but has been revived and renewed by both Dr. Fay and Dr. J. O. Arnold, for the treatment of eclampsia is now an established fact as is proved by the results obtained by the obstetrical records of the Temple University Hospital. In genitourinary practice, work by Dr. W. H. Thomas has shown the efficacy of maintaining fluid balance in regards to cases of prostatic hypertrophy.

Just what does fluid balance mean, and how may it affect so vastly different fields as neurosurgery, obstetrics and urology?

First, fluid balance is the ratio of water intake to fluid output. All fluid consumed, regardless of kind, must balance the output in a normal individual. Granted that some moisture passes off as sweat from the surface of the skin or as vapor from the exhaled air, still the amounts so thrown off are so small as not to seriously affect the numerical value of water intake and urine output.

Second, unconciousness and paralysis in head injuries; coma and convulsions in eclampsia; coma and irrationalness in the cases of hypertrophied prostates; and uremia as a complication often seen in the last two, are, for the most part, directly due to some derangement of fluid balance.

Disturbed fluid balance is as definite a syndrome as is acute appendicitis, or brain or cord tumor. The end result is the same regardless of the primary cause. In head injury, it is due to cerebral edema from direct trauma; in eclampsia, faulty metabolism, and in prostates, hydrostatic pressure from mechanical obstruction to the normal outlet.

Let us take the case of benign hypertrophy of the prostate. When the urethra is closed, the bladder becomes overdistended and back pressure is created. This, in turn, results in hydronephrosis. As the pressure within the kidney increases, the ability of the kidney to excrete becomes less and less, with the result that more and more water is left in the blood. Water in the blood stream is the same as it is anywhere else—it seeks its own level—or follows the course of least resistance. Where does it go? If the chemical composition of the blood is exactly right, there can be a physiologic shift of water into the tissue spaces with the resulting edema—more frequently seen in pregnancy than in prostates, however. But far simpler than this, is the escape into the cerebrospinal fluid system of the brain and spinal cord. Blood with an excess of water content passes through the choroid plexuses of the lateral ventricles and cerebral fluid is excreted into the ventricles. Normally this fluid passes through the system

and is taken back into the blood stream, 90% through the Pacchionian bodies of the great sagittal sinus and cisterna magna, and the remaining 10% through the spinal nerve roots by lymphatics and veins. However, if the blood already has too great a water content, it cannot absorb more, and hydrostatic pressure is built up within the cerebrospinal fluid system. Then things begin to happen: since the skull is a closed box, occupied with brain, blood, and cerebrospinal fluid, an increase of fluid means a diminution of one or both of the remaining occupants. This is exactly what happens. First, the brain is compressed, compression sets up an edema, the edema creates more pressure and draws more fluid to the skull and a vicious circle is established. The edema is also responsible for cerebral irritation and transient paralyses; aphasias, convulsions, or even coma may result. If the increased pressure and edema are great enough, the blood vessels are compressed, the blood supply is shut off and brain atrophy with its irreparable damage results.

This, in the briefest sort of way, is the syndrome of disturbed fluid balance.

Treatment is merely common sense reasoning. Remove excess fluid and limit the intake to balance the output. When cerebral irritation is evident, we know that there is increased intracranial pressure and the quickest and most satisfactory method of lowering it is by spinal puncture. Where it is definitely known that there is no existing posterior fossa tumor, spinal drainage is easily carried out. Complete drainage may be done and repeated every 4-6 hours if necessary. To determine when to drain, take the B.P. every 30 minutes if condition is serious, or every 2 hours if not so dangerous, and drain when the pulse pressure crosses the pulse rate. Again, in the case of the prostate, unless severe cerebral signs are manifested, decompression of the bladder is, of course, started. Then an accurate measure of the output and intake is made—never allowing the intake of any one day to exceed the output of the day previous. Here, in this hospital, as in Temple University Hospital, a regular intake-and-output chart is kept with the nursing records—a blue column indicating intake and a red column indicating output. Thus, a quick glance shows the amount of kidney function. At first, until the accurate output is ascertained, the patient is put on a restricted dry diet and allowed but twenty ounces of fluid per day. (An exception to this will be noted later.) The time necessary to find a constant output is usually 24-48 hours. Then the intake may be gradually increased until a balance is reached—not forgetting, of course, that if the patient is hydrated, holding the intake down will aid removal of excess fluid.

This latter procedure, however, may not dehydrate with sufficient rapidity, and yet the patient may not be ill enough to warrant repeated spinal drainage—then the intravenous use of hypertonic solutions is indicated. Magnesium sulphate and 50% glucose are the drugs of choice. Magnesium sulphate is only used for rapid dehydration and is contraindicated in the presence of shock. The dose is one 20 c.c. ampoule of a 10% solution. Glucose serves a double purpose. It not only takes fluid from the brain but also, this same fluid tends to build up the blood volume in that its hypertonic action is faster than kidney elimination. This factor is of value in head injury cases where the blood pressure tends to drop. If necessary to rapidly build up a falling blood pressure, normal saline or Ringer's solution, in small amounts, can be given with the glucose. Magnesium sulphate enemas given alone or in conjunction with intravenous medication are of benefit in lowering intracranial pressure due to their hygroscopic properties. Before closing, I should like to read the summaries of treatments of eclampsia and head injuries as used in the Temple University Hospital.

ECLAMPSIA

Consider every patient from the standpoint of the amount and distribution of surplus water in her tissues.

Make careful observations and records of 1. Blood Pressure—at least every 2-4 hours. 2. Urine output. 3. Fluid intake. 4. All complaints and symptoms—pain, headache, vomiting, stupor, disturbed vision—convulsions (number, frequency, duration, and degree of severity).

Pre-eclampsia, of whatever degree, leading up to and culminating in the "convulsive state," eclampsia is best considered and treated as but one condition, in varying degrees of severity, or stages of advancement, as:

1. The moderately Pre-Eclamptic Stage.

2. The Dangerously-Threatening Pre-Eclamptic Stage.

3. The Eclamptic, or Actively Convulsant Stage.

The outline of treatment for each stage is as follows:

First Stage:

(a) Withhold (or restrict to a minimum) all fluids until the 24-hour urine output is known.

(b) Total fluid intake in next 24 hours is not to exceed previous day's output of urine.

(c) Chart accurately the daily intake, output, and weight, and maintain, as far as practical, a balance of fluids, and a control or reduction of weight.

(d) Dehydrate moderately with small daily doses of saturate solution of magnesium sulphate.

(e) Give salt-low diet,—comparatively dry or solid fluids of wide variety, including proteids, and excluding ice cream and other sweets.

(f) Allow small meals, at 3-hour intervals throughout the day, with no food or drink at any other time.

Second, or Dangerously-Threatening Stage.

Follow the same general principles as for mild cases, but add the following more immediately effective measures:

(a) Begin at once to dehydrate by giving intravenously 50 c.c. doses of 50% glucose, and repeat the same in 4-6 hours, if necessary.

(b) Give magnesium sulphate (saturated solution) by mouth, until effective in watery stools. Repeat daily, or as indicated. (Rarely, one or two 20 c.c. doses of 10% solution magnesium sulphate intravenously, may be substituted.)

(c) If very urgent, or no marked improvement is seen in 15-30 hours, do one or more spinal drainings, at 4 to 5 hour intervals.

(d) If spinal drainage is impractical, venesection may sometimes be substituted, but not where labor is well established, or early delivery is anticipated.

(e) When the immediate danger has been abated, keep a careful weight chart, and maintain a strict fluid balance throughout the remainder of pregnancy.

Third, or Convulsant Stage.

(a) If absolutely necessary to facilitate other treatment, begin with a sedative intramuscularly. (Sodium luminal gr. iii, or very rarely, Morphine gr. ¼ to gr. ½.)

(b) Give at earliest possible opportunity, 50 c.c. of 50% glucose intravenously. (20 c.c. of 10% magnesium sulphate may sometimes be substituted, or added.)

(c) Drain spinal fluid as completely as possible (45 to 100 c.c.) preferably with head raised to an angle of 30 degrees. (When spinal drainage is impracticable, venesection may be substituted.)

(d) Repeat glucose in 3-4 hours, and spinal drainage in 4-6 hours, if marked improvement is not seen.

(e) Give magnesium sulphate purge at earliest opportunity, and repeat as indicated for continuing dehydration.

(f) Absolutely no other fluids are to be given for at least 24 hours, and careful record kept of T. P. R. and pulse-pressure.

(g) If dehydration has been thorough and effective, the uterus need not be emptied, nor labor induced or hurried, except for reasons other than the attack for which the patient is being treated.

HEAD INJURY

(a) A brief outline of the treatment of severe head injury.

1. "Secure and maintain conciousness at all costs."

2. Inspect the air way and keep it clear. Make sure that patient does not swallow tongue.

3. Note and record pulse, temperature, respiration and blood pressure.

4. Treat shock, unless hemorrhage is severe.

i. Arrest hemorrhage.

ii. Restore body temperature.

iii. Relieve pain and restlessness (moderate doses of morphine).

iv. Raise the blood pressure.

a. Atropine (gr. 1/100) to check vasodilation.

b. Pituitrin, surgical (M.xv).

c. Strychnine sulphate (gr. 1/30, if needed).

d. Restore blood volume.

1. Sterile, balanced, 50% solution of glucose intravenously (40-60 c.c.).

2. If tissue fluid loss has been very great, *small* amounts of sterile normal saline solution may be given intravenously.

3. Blood transfusion may be indicated.

5. Debridement of the wound should be done, when the patient begins to come out of shock.

i. Open wound freely, clean the edges.

ii. Remove all dead macerated and oozing tissue.

iii. Check hemorrhage and get a clean field.

iv. Dress the wound.

Unless a very marked depressed fracture, or a compound, comminuted fracture exists, suturing, x-ray or operation is not attempted at this time.

6. A general physical examination, noting and recording all findings normal and abnormal. At this time other injuries, which may have occurred, should be noted not only for treatment but also to prevent them from later obscuring a neurological picture.

7. Spinal puncture, under surgically aseptic technique, the spinal fluid pressure being taken and recorded; the character of the spinal fluid noted and recorded, and unless contraindicated, spinal drainage is done. A sample of the fluid is sent to the laboratory for examination.

i. Repeated drainage is not necessary at this time if the fluid is clear.

ii. If spinal fluid is bloody all of the fluid obtainable is withdrawn.

(b). Hospitalization.

1. Sedatives.

i. Sodium luminal (gr. 1-3, hypo.).

ii. Chloral (gr. xv.) and if unconscious; Chloral gr. xxx, bromide gr. xl in water oz. iv by rectum.

Sodium bromide (gr. xxx- by mouth).

iii. Morphine, q.s., as a last resort.

2. Routine orders. (Modified to meet the requirements of the case.)

i. Elevate the food of the bed.

ii. Record T.P.R. every 15 minutes.

iii. Record B.P. every 30 minutes.

iv. Chart pulse pressure every 30 minutes. "When the pulse pressure crosses the pulse rate, that is the time to dehydrate."

v. Blood count, complete.

vi. Type blood (when the report returns it is time to notify donor, if there is a likelihood that transfusion is needed).

(It is easier to send a donor home, not wanted, than to need one and not have him.)

vii. Urinalysis, when specimen is obtained.

viii. Solid diet if possible.

ix. Restrict fluids; to oz. xx in 24 hours, if the spinal fluid is clear; oz. xxx-xxxii in 24 hours if the spinal fluid is bloody.

(Allow more fluid for spinal drainage.)

3. Record fluid intake and output, daily until the second week.

4. Repeat the initial dose of pituitrin every 4 hours.

5. If necessary to make up blood volume, give 50 c.c. of 50% glucose intravenously and follow with small amounts of normal saline if needed.

6. If pulse pressure continues to approach the pulse rate, further dehydation must be secured by:

i. Spinal drainage.

ii. Enema containing:

Mag. Sulph. crystals,	oz. iii
Glycerine,	oz. i
Water, q.s.ad.	oz. vi

This may be repeated if ineffectual.

iii. Mag. Sulph. by mouth.

Mag. Sulph. crystals oz. $\overline{ss}$ in water oz. vi.

iv. A better method is to combine the Mag. Sulph. enema with the intravenous administration of glucose.

Magnesium sulphate is contraindicated in any procedure when the patient is in shock or when there is a marked reduction in blood volume.

(Causes too rapid dehydration.)

With shock controlled and intracranial pressure reduced, brain edema is at a minimum and the brain is receiving an adequate supply of blood and oxygen, with a diastolic pressure of 60 or above. It is now possible to make a detailed neurological and x-ray examination. If focal signs indicate that a decompression must be done, it is now possible without danger of a "Tight brain."

7. Suture lacerations.

(c) Post hospitalization phase.

1. Limit the patient's fluid level to not more than oz. xxxii-xl per 24 hours for at least 3 months to prevent post-traumatic sequelae, e.g., dullness, headache, vertigo, tinnitus, etc.

2. Instruct the patient how to take care of himself; explain the nature of his condition to him, or his family, and caution him to avoid further trauma. The latter is of considerable importance as it may mean a change of vocation.

3. Attempt to get the patient back to work within six weeks if possible but not later than six months. The sooner the patient resumes his

normal life the less likelihood there is of him developing post-traumatic neurosis.

4. Definitely caution the patient against ever indulging in any fluid excesses, more especially of alcohol in any form, at any time for the rest of his life.

5. Occasional physical and neurological examinations and other studies to determine whether or not mental or physical disabilities have resulted from the injury and, if so, to what extent the patient is incapacitated. Here, as well as during the time when the patient was hospitalized, accurate, concise and complete records must be kept. Such records are of untold value in medico-legal cases.

Since this is only a brief outline for the treatment of a severe head injury, it is not to be considered as a formula because routine treatment is not possible for this type of case.

Each patient must be handled as an individual problem. Experience and plain common sense, plus a careful observance of the signs and symptoms with due regard therefore, are needed to decide which measures may be of value, and which are contraindicated, for each particular case. Some understanding of the pathologic physiology, as well as the normal physiology, is essential. If so, it is much easier to map out a plan by which to secure the return of normal function. It is as important to know *why* to do a procedure as to know *how*.

In conclusion, I should like to state that in the past four months I have seen here several cases representing the three types discussed. They were handled as described, with variations to suit the case, with highly favorable results. At no time was the oldtime bug-bear of forcing fluids to wash out so-called toxins used. One of the more interesting cases, now recovered and working, was one of Dr. O. J. Rabe's. Another, a patient still in the house, is one of Dr. J. H. Hutton's.

Fluid balance, although not a miraculous cureall, deserves more careful consideration than it has received. The simplicity of its management and the brilliance of its results permits the value of fluid balance to stand on its own merits.

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DEGENERATIVE HEART DISEASE*

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A few short years ago, beginning approximately at the time of our entry into the world war, the medical profession began to witness another of those cataclysmic changes which have occurred in medical thought and practice at odd intervals since Hippocrates brought out his monumental works. So far as our present day conceptions of physiology and pathology are concerned this newer group of concepts has assumed importance and has had effects on medical thought that rank with the discovery of general anesthesia in surgery and the allergic reactions in skin affections and asthma.

I believe that the apparent rise of degenerative cardiac death rate has really not been as great as statistics would have us believe. (American Heart Journal, Apr. 1932, Robt. Levy, New York.) Robert Levy of New York, writing on coronary sclerosis in the April, 1932, *American Heart Journal*, showed by autopsy records of the Presbyterian Hospital, 1920 to 1929 inclusive, that there has been no change in percentage of coronary artery disease incidence during that period. During that same period however the percentage diagnosed increased fourfold showing conclusively that *better diagnosis* is the real answer, rather than actual increase. With frequent electrocardiographic study, blood pressure readings, and increased interest of the profession together with the marked excellence of the rather voluminous literature of the past few years on this subject, more cardiopaths are properly diagnosed than formerly. Just as the cases of appendicitis in our grandfathers' time were present but not diagnosed as such, so it has been with heart disease until the past few years. Elderly people who once died of "asthma" now die of cardiac failure induced by hypertension, coronary disease and heart block, and we can prove it with the means at hand. One of, if not the most striking of the new concepts, is our change of attitude as to the cause of heart failure from one of valvular pathology, to one of physiological pathology of the myocardium itself. So marked has this change been that many cardiologists today do

*Read at Huber Memorial Hospital Annual Staff Meeting. Pana, October 26, 1932.

not even trouble to diagnose the valve involved. Thousands upon thousands of cardiac autopsies have shown us that in less than forty per cent. of cardiac deaths is any valvular pathology found. Of this less than forty per cent., the valvular lesion is an associated finding of far less importance to the patient than the main lesion of the myocardium which is responsible for the symptoms of congestive failure when compensation becomes inadequate to meet the demands of life. Hypertension of advanced grade may be maintained for several years without demonstrable failure provided the myocardial blood supply is intact and adequate. Something else must supervene before failure occurs whether that something be a thrombotic accident, infection, increased demand from altitude changes, or a progressive coronary sclerosis and stiffening which cuts down the reserve factor.

In order to clarify if possible, the group of cardiopathies which I intend to discuss in this paper, I wish to offer a classification of heart disease which has helped me considerably in differential diagnosis. It is really a combination of opinions from such recognized authorities as Cabot, Reid, McKenzie, Pareja, Vaquez and others, containing a little of each. A particular heart classified according to the scheme, will be found easier to study and understand for the groups are fairly distinct and for the most part overlap but little. Having had the honor of being on the pathological staff of the late A. S. Warthin of Ann Arbor, I can appreciate the wide divergence of opinions expressed by pathologists generally concerning many of the points in the background of these degenerative cardiac lesions. I have, therefore, confined myself largely to a clinical grouping as can be seen. Having placed the study in one group it is rare that one of the others enters into the picture to any great extent with the exception of progressive coronary sclerosis.

	Age Increase	Type
1.	0 to 10	Congenital
2.	10 to 35	Rheumatic (a) Malignant endocarditis. (b) Ch. infectious endocarditis.
3.	40 to 50	Syphilitic 5%
4.	50—up	Degenerative 70%
5.	50—up	Anginas
6.	40 to 50	Endocrine disease, hypo and hyperthyroid or pituitary.
7.		Mechanical interference (a) Associated lung disease. (b) Pericarditis (c) Pericardial adhesions.

My particular interest at this time lies in the degenerative group 4, which constitutes approximately 70 per cent. of the total. It is this group in which heart pain and angina largely occur, though as can be seen I have classified the anginas under separate heading. This seems a justifiable procedure since angina may occur without any demonstrable pathology referable to degenerative processes. Whether angina ever occurs without coincident pathology I seriously doubt. Certainly our present methods do not always show it. The statement of the great McKenzie on this point is worthy of consideration. He says that "the fundamentals of understanding of disease is not found in structural pathology alone but must rest as well upon functional pathology." The heart of exophthalmic goiter is a case in point.

Hypertensive heart disease, the first subdivision of the degenerative group, even now rests upon insecure footing so far as its pathology is concerned. The primary dilatation and later hypertrophy which occur in these people seem to be compensatory phenomena but why the increased pressure in the first place? Tremendous pressures may be maintained for many years without the slightest evidence of cardiac fatigue or embarrassment as we have all repeatedly seen. So far as we know the compensatory power of normal hearts with adequate blood supplies is not a limited quantity. It is the general opinion among cardiologists that no physical strain which a patient may voluntarily impose on a normal heart will over-ride its capacity to serve. The answer to the riddle as to why these hearts of hypertensive patients fail must be sought elsewhere than in simple increased pressure. The key to the solution must lie in some retrogressive change from myocardial infection, toxic degeneration or failure of the blood supply to the heart muscle itself. It is for this reason that I classify hypertensive heart disease with the degenerative group. I would call your attention also to the fact that no actual heart disease is present in these people until these retrogressive changes take place.

Fundamentally speaking, the compensation of the hypertensive heart, except where active toxic myocardial changes or infection super-

vene, depends upon the integrity of the coronary circulation which is the keystone of the arch. Failure of the myocardium is normally to be expected sooner or later, depending upon the unknown rate of decreasing resiliency of the ever changing and labile coronary system. The heart first responds to increased pressure demands by stretching its fibres or dilatation and later moderate increase of myocardial tissue or hypertrophy. This latter calls for more blood supply per unit of time which is supplied by dilatation and perhaps a limited amount of growth in the coronary system. With stationary hypertension a balance is established and little harm results. With increasing pressure demands, however, the growth of blood supply may fail to keep pace with hypertrophy and a coronary circulation, never blessed with much power of increase by growth and denied, or limited in, the power of anastamosis, is faced with demand beyond capacity. Starvation and failure of myocardium becomes inevitable.

Viewed in this light hypertensive heart disease and progressive coronary sclerosis are closely allied conditions and should be discussed together. The failure in the latter instance however, is the result not of real increase of myocardial demand beyond coronary capacity but decrease of coronary capacity below a stationary or receding myocardial demand as age increases. This type of heart is not hypertrophied at autopsy but may be actually atrophied. Failure of a normal sized heart is practically always diagnostic of coronary disease. Where there has been a preceding hypertension and coincident hypertrophy the heart sizes are found much greater. In the presence of cardiac failure with evident coronary disease it is often possible to deduce a previously existing hypertension by this means alone. The point is important in that your present blood pressure reading may be normal or below. When the physician knows of or deduces a previously existing hypertension in a patient whose systolic readings are now within normal limits, he must be very sure that the drop in pressure is not due to a failing myocardium which cannot carry the burden any longer. Apparent improvement in systolic blood pressure may be bought at the expense of cardiac dilation which is really of *bad import*. Many serious errors may be avoided if we can train the profession to rely equally on the diastolic and systolic pressure. In most cases of partially decompensated hypertensive hearts the diastolic pressure remains high or, actually, shows a rise. Conversely I can recall numerous instances in practice where, starting with congestive signs, such as moisture in the lung base, cough, orthopnea, enlarged liver, oliguria, etc., with normal systolic and high diastolic pressures there has been progressive improvement with rising systolic and dropping diastolic after rest and medication

Another important point about hypertension which has been stressed but little is the vascular crises these people have, sometimes for no apparent reason. They complain of sudden giddiness and prostration, flushing of the skin, and at times have mild mental changes. Examination at these times may show abrupt rises or again drops in either systolic or diastolic pressures or both. A few hours later pressures are again stabilized and symptoms gone. It would seem from this that symptoms are most likely to appear when pressures change upward or downward and not at stationary levels. Reasoning from this basis it has been my practice to keep the circulation of these people under at least the partial control of medication as a means of lessening the frequency and severity of these attacks. I have used cardiac medication, xanthin bases and even general sedatives with equally good results. The point becomes especially important where anginal attacks are complained of. Reid (The Heart In Modern Practice) believes that the anginal syndrome is a functional disorder and is largely, if not altogether, due to failure of the peripheral capillary bed to dilate under strain and exercise, and that this failure leads to increased intra-aortic and intra-cardiac pressures with coincident pain reflex! This would put true angina and the vascular crisis previously mentioned on the same basis, the difference being one of localization only. It is interesting to note that the same therapeutic measures will control both in the majority of instances.

As to the primary cause of hypertension, I do not believe that anyone has yet given a satisfactory explanation. Focal infection and nervous influences, heavy responsibility, alcoholic and other excesses, inheritance, endocrine

disturbances and many other factors certainly enter into it but definite information as to causal relationship is not shown. It seems to me that the primary condition is compensatory to some factor as yet undiscovered. I do not believe the condition is curable in the light of present knowledge. To some extent it can be improved and many times a favorable drop to certain minimum basic levels is attained but I have not yet seen what I regard as a cure. Perhaps the internal glandular field may offer us something when we know more about it. Perhaps the great McKenzie was near to the truth when he stated, (Disease of the Heart), that "the fundamentals of our understanding of disease are not found in pathology alone but must be sought in functional pathology as well."

Coronary sclerosis in contrast to hypertension has good foundations on which to rest—pathology here is definite and positive and the course to cardiac infarction, acute or chronic is well known and definite. Regarding the accident of acute thrombosis, Reid says, "The recognition of this condition by clinicians may be said to be a feature of American medicine." To quote McKenzie again, "The nature of the heart *trouble* which occurs in advancing years depends on the structure in which capillary obliteration is most advanced." He goes on to show that similar lesions in the anterior or posterior coronary system may at various times give partial or complete heart block, delayed conduction, disturbances of the auricular rhythm or merely ventricular weakness. Lesions within or near the genetic system seem to be particularly serious.

Thrombosis of a diseased coronary artery is probably the greatest insult the heart muscle can receive, next to direct injury by projectile, and leads to many acute failures. When the accident occurs in a small vessel or as the end result of gradual occlusion by sclerosis over a period of months or years the condition is not so dramatic, often not accompanied by pain and may even make little inroads on the cardiac efficiency. While we were taught as students that the coronaries were end arteries there is evidence to show that, in some individuals at least, a limited anastamosis has taken place. In some individuals where actual thrombosis or obliteration has taken place there is undoubtedly either canalization or growth of new vessels. We must believe this when we see hearts that are bad clinically and electrocardiographicly one year, improve and show little or no signs of disease the next. For this reason a diagnosis of coronary sclerosis or even block does not necessarily demand a fatal prognosis. We now believe that the majority recover. Nathanson of Minneapolis, writing on coronary sclerosis from the clinical standpoint, (J. A. M. Sc. Aug. 1925), found the following in 139 autopsied cases:

1. The average age was 59.6 years.
2. Males predominated in the proportion 6 to 1.
3. Eighty per cent. had pain coming in attacks of anginal type while ten had nocturnal dyspnea and ten per cent. no signs.
4. In twenty per cent. progressive failure called the physician's attention to the malady.
5. The character of pain was described as a sense of fulness or pressure, substernal, worse after exertion, without radiation in ten per cent. This is typical of the "stenocardia" or "angina of effort" of Vaquez. In twenty-five per cent. the pain was epigastric . . . . something for the surgeons to think about! In ten per cent. nocturnal dyspnea was the only complaint.
6. Death without general edema was usual. 60%.
7. Forty per cent. died in definite congestive failure.
8. Sixty per cent. had enlarged hearts, while forty per cent. showed normal size.
9. Actual coronary thrombus was found in twenty per cent.

The differentiation of the clinical syndrome of coronary sclerosis from the anginal syndrome described by Heberden originally has confused the medical profession considerably in the past and this seems a good place to discuss them briefly: Heberden's original description 1768 and Rouguons (Besancon 1768) is as good a picture of stenocardia or angina of effort today as it ever was. Angina of decubitius described more recently by Fraenkel Brunton, Vaquez and others is known to be due to definite heart strain with dilatation. The point is that angina is a particular type of *pain* which may be found in a number of different diseases of the heart, great vessels or perhaps even the general capillary system and which may be provoked in many different ways. There may be much associated pathology or none demonstrable. The seriousness of the prognosis where anginal pain exists *depends largely upon the associated findings;* always bear in mind that observation and knowledge as to the amount of control possible are im-

portant prognostic points. A change or progressive drop in systolic or in diastolic pressure is to be regarded as of serious import. Any anginal pain which is not promptly relieved by rest with or without the nitrites should be viewed with alarm. A persistent sense of impending death after disappearance of pain should lead to a warning of the patient's nearest relative which may save the attending physician much embarrassment. Congestion of the lung bases during or after an attack of pain has about the same significance. I follow the rule in my own practice that a diagnosis of angina pectoris is not sufficiently enlightening for my purposes. I fail to find in my records of past cases such a diagnosis. There are many who have the anginal syndrome *but the fact appears in the history;* their final diagnoses read coronary sclerosis, aortic aneurysm with involvement of the coronaries, chronic essential hypertension, auriculoventricular block, cardiac infarction, coronary thrombus and the like. A few have had pernicious anemia, diabetes mellitus with coronary endarteritis. The majority have had plain old fashioned arteriosclerosis with which we all expect to die if we live long enough! I have seen several typical attacks follow the induction of artificial pneumothorax brought on, no doubt, by the change in intrathoracic pressure ballances. Quite naturally the question of treatment arises in the mind of any man dealing with these conditions in daily practice. At the risk of some criticism and with the understanding that many may not agree (including myself at some later date), I am willing to discuss a few points along general lines. I recognize of course that the majority of these conditions are fundamentally of an incurable nature. In general therefore, the first move should be to reduce the demand below the known capacity. This may at times mean cessation of all physical activity, even to bed rest. Again it may mean only curtailing some specific activity such as stair climbing or the rapidity of the walk to the place of business. I usually try to keep elderly people "moving" and interested in their usual pursuits as long as possible. A little care in teaching a patient how fast he may walk without discomfort has been time well spent in my experience. The case of one of my elderly mild diabetics of exceptionally high grade intelligence is worth quoting. He had a coronary sclerosis and by close observation and experiment we found that he could walk at the rate of sixty steps per minute almost indefinitely without discomfort. Seventy-five produced discomfort while one hundred stopped him within a block. Another valuable hint in therapeutics is to teach people with degenerative heart disease to "be their age." I have had plenty of patients at sixty or more who will drive three hundred miles a day if allowed to, and incidentally call me out at night to relieve their pain. There are innumerable high grade business men who will insist on playing thirty-six holes of golf on a holiday, because it is a holiday. There are plenty of sixty-five year olds who carry the universe on their shoulders, not to mention a big business with all its details, simply because they are used to doing it and are too egotistic to see that their forty year old sons or associates, or vice-presidents or what have you, can relieve them of most of the burden and should be allowed to do it. The combination of executive and workman at sixty is not a good one for cardiac disease. As to management of acute congestive failure, I shall say nothing. There are however, two drugs for routine long continued use which I believe have considerable value. The first is iodide over long continued periods. It seems to help arteriosclerosis generally (in spite of lack of experimental proof) and many times causes the complete disappearance of symptoms for considerable periods of time. The other is the theobromine class of coronary dilators whose foundation in experimental proof is on solid ground. Many patients whose limits have been narrowing for months, will gradually improve under them; sometimes the improvement amounts to clinical cure. Another important point is the removal of extra cardiac physical disabilities and sources of intoxication and infection. In this class comes the sluggish colon, the boggy prostate and the unclean mouth. These are at best extra loads there is no sense in having any patient carry.

Early in my medical career, as a member of the American Expeditionary Force, I was much impressed at the extensive amount of physical damage men can suffer and remain alive. Since that time in civil life I have even

increased my respect for them. I am convinced that the human species is at the top of the animal kingdom, not alone by the possession of hand, heel and brain, but also because of the inherent tenacity with which it clings to life. The species is tremendously strong and infinitely adaptable and therein lies the secret of race survival or at least a part of it. The wonder to me, is not that humans die of heart disease, but that they go on and live and accomplish after such extensive damage.

THE BIOCHEMISTRY OF THE BLOOD AS DIFFERENTIAL DIAGNOSTIC AID IN DISEASES*

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THE CLINICAL SIGNIFICANCE OF BLOOD ANALYSIS

The circulating blood conveys nutritive substances to the organs for assimilation and absorption. It also conveys the waste products which result from the catabolic and anabolic processes of the cells and tissues. It is evident that any pathological condition, transient or permanent, may alter, more or less, the chemical constituents of the blood.

It is the purpose of this paper to point out, briefly, the indications of chemical determinations of the blood, discussing individually the changes of the chemical constituents that are commonly met with under various abnormal conditions.

Table I illustrates the different values of the more important constituents as they occur in various diseases:

(1-6) *Total Solids* (Protein, Albumin, Globulin, Fibrinogen and Total Nitrogen): While chemical evidence of an increase or decrease of the constituents may be determined very simply, the amount of information actually obtained through such determinations is so insignificant that these determinations, thus far, have not been used in routine practice. It may be stated, however, that in cases of lipoid nephrosis the Globulin-Albumin ratio is of considerable significance. Total protein may be determined by determining total nitrogen.

(7) *Hemoglobin:* Hemoglobin is a very complex substance consisting of globin and hematin (the hematin being composed of iron and a pigment known as hematoporphyrin). It occurs in the circulating blood in two forms, namely as oxyhemoglobin (arterial blood) and reduced hemoglobin (venous blood).

The amount of hemoglobin in the blood is determined usually by matching the color either of the whole hemoglobin or of the decomposed hemoglobin with known standards. As the percentage of hemoglobin in the blood of healthy individuals fluctuates with age and sex from 14 to 17 grams per 100 cc. (assuming 5 million corpuscles in 1 cmm.) it would be advisable to determine the amount of hemoglobin in the blood by making a quantitative determination of the iron. The proportion of iron in hemoglobin is constant, lying between 0.33 and 0.34 per cent. In 1923, Wong described a method for determining hemoglobin accurately through its iron content and this method has already been adopted to standardize the various available hemoglobinometers. An exact standardization of arbitrary instruments, expressing the amount of hemoglobin or iron, for matching the color of the blood to be examined, would help to avoid the errors made in laboratories.

An accurate estimation of hemoglobin is, therefore, more satisfactory than a red corpuscle count. It helps the physician to judge the degree of anemia and the results of treatment.

An increase of hemoglobin may be observed in change of residence from a lower to a higher altitude, because with increase of the altitude the fraction of oxygen taken up by the hemoglobin is diminished, in poorly compensated heart diseases, in chronic diarrhea and polycythemia vera. A decrease is noted in various forms of anemia and after repeated hemorrhages. A slight decrease is also observed in infection with intestinal parasites.

(8-12) *Total Non Protein Nitrogen (N.P.N.):* Total N.P.N. normally varies from 20-40 mgs. per 100 cc. of blood. This normal variation depends to a great extent upon the state of digestion and the amount of absorption from the digestive tract. This is the reason for making these determinations on blood drawn before the patient has had breakfast. It is generally understood that N.P.N. includes Urea N., Creatinine N., Uric acid N., Ammonia N.,

*Presented at the Scientific Staff Meeting of the Grant Hospital of Chicago.

TABLE I

Chart showing average range of normal and abnormal chemical constituents of circulating blood.

		Volumetric contents figured upon a total blood volume per 5 liters	Variations in chemical constituents of blood per 100 cc.		Blood analysis is indicated in the following conditions:	
			Normal	Pathological	Conditions in which increase is found	Conditions in which decrease is found
1.	Total solids		19-24%		Anhydremia.	Anemia.
2.	Total Serum Proteins		6-8.2%			Nephrosis.
3.	Albumin (Serum).		4.5-6.8%			Nephrosis.
4.	Globulin (Serum).		1.2-2.3%		Syphilis, pneumonia, uremia, anaphylaxis, nephrosis.	
5.	Fibrinogen (Plasma)		0.3-0.6%		Pneumonia, septicemia.	Liver diseases and cachexias.
6.	Hemoglobin		14-16%		Polycythemia vera, chronic pulmonary diseases.	Any form of anemia.
7.	Total Nitrogen		3-3.8%		Those conditions in which protein increases are found.	Those conditions in which proteins are decreased.
*8.	Non Protein Nitrogen	2 grm. = ½ dr.	20-40 mg.	40-400 mg.	Eclampsia, glomerulo nephritis, metallic poisoning, cardiac failure, hepatitis, intestinal and prostatic obstructions.	
9.	Urea Nitrogen (Urea--Urea N x 2.142)	0.5-1.0 grm. 1.07-2.14 grm.	10-20 mg.	20-350 mg.	Urea either parallel or with relative increase.	Nephrosis.
10.	Creatinine	0.05-0.10 grm.	1-2 mg.	2.5-35 mg.	Nephritis.	
11.	Uric Acid	0.1-0.2 grm.	2-4 mg.	4.5-20 mg.	Nephritis, gout, arthritis, eclampsia, lead poisoning and acute infections especially pneumonia.	
12.	Indican	2.5-10 mg.	0.05-0.20 mg.	0.25-4 mg.	Uremia due to nephritis and vascular diseases of the kidney.	
13.	Sugar	4.5 grm. = 1 dr.-1.5 dr.	80-120 mg.	70-800 mg.	Diabetes, thyrotoxicosis in pregnancy, severe nephritis, pancreatitis.	Cirrhosis of the liver, polyglandular insufficiency, tumors of the pancreas and hyperinsulinism.
14.	Cholesterol	7-10 grm. = 1 teaspfull	140-200 mg.	60-1.000 mg.	Diabetes, nephritis, lipoid nephrosis, biliary obstruction, pregnancy, xanthomatosis and some cases of carcinoma.	Pernicious anemia.
15.	Chlorides as NaCl in plasma	25 grm.	450-500 mg.	300-850 mg.	Nephritis, cardiac conditions, prostatic obstruction.	Diabetes, chronic fever, pneumonia and high intestinal obstruction.
16.	Calcium	0.45-0.55	9-11 mg.	3-20 mg.	Extensive metastases of tumors to the bones, hyperfunction of the parathyroid.	Infantile tetany, parathyroidectomy.
17.	Inorganic Phosphorus as P. Adult Children	0.20-0.30 grm.	3-4 mg. 4-6 mg.	4-40 mg.	Terminal stages of nephritis.	Rickets.
18.	Icteric Index		(Term 1:10.000 $K_2Cr_2O_7$) 4-6	10-225	In latent and manifest jaundice.	
19.	CO_2 Capacity	12 gr. = tbspf. $NaHCO_3$	50-75 Vol. %	5-130	Alkalosis.	In diabetic and nephritic acidosis.

* Numbers 8-12 are Split Products.

TABLE II

SUMMARY

The following quantitative determinations are recommended: *(Numbered according to relative importance).

	Diseases	Sugar	Cholesterol	N.P.N.	Urea N.	Creatinin	Uric Acid	Indican	Chlorides as NaCl	Calcium	Inorganic Phosphorus	Vanden Bergh Icterus Index	CO_2
1.	Diabetes Mellitus	+*											
2.	Diabetic Coma	+2	+3										+1
3.	Acute Nephritis				+2			+1					
4.	Chronic Nephritis	+6	+7	+2	+3	+4	+5	+1	+8	+9			
5.	Lipoid Nephrosis	+3	+1	+2									
6.	Uremia	+7		+4	+2	+3	+5	+1					+6
7.	Toxemias (Pregnancy, eclampsia, tumors)			+1	+2		+3						+1
8.	Disturbances of G. I. tract			+1					+2				+3
9.	Xanthomatosis	+2	+1										
10.	Conditions involving pancreas, gallbladder or liver	+2	+3		+4							+1	
11.	Disturbances of G. U. tract				+1	+2	+3	+4					
12.	Tetany, bone diseases									+1	(+2)		
13.	Poisoning, (Metal, Phosphorus, Chloroform, etc.)				+1	+2							
14.	Gout			+2			+1						

Amino Acids N. and unknown nitrogenous products. Under pathological conditions, it is important to interpret the ratios of these nitrogenous constituents composing the total N.P.N. For example, it is an established fact that whenever the total N.P.N. increases, either one or two or all of the component constituents will of necessity also be increased. It is true, too, that both Creatinine N. and Uric Acid N. may remain normal, while Urea N. becomes increased, thereby elevating the total N.P.N. correspondingly.

While we understand that N.P.N. determinations are indicated essentially in renal diseases, it is also important to know under what conditions the determinations of the other nitrogenous components are of value. I mean that while in the early stages of nephritis one may want only Urea N. and Indican determined in the later stages of nephritis more information may be obtained by determining creatinine N. and uric acid N.

Generally speaking N.P.N. retention is indicative of an impairment of the glomerular apparatus of the kidneys. In severe infections, however, nitrogen retention is due to dehydration and does not indicate renal involvement. In chronic nephritis, associated with anemia, there is as a rule a marked retention of nitrogen.

Concerning Urea Nitrogen and Creatinine: Some workers assume that an impairment of the kidney is first manifested by an increase of uric acid and that with the progress of the disease the level of urea nitrogen and creatinine begins to rise. In several hundred analyses carried out in our laboratory, I observed that this was true in the majority of cases but I noticed also first a considerable retention of urea nitrogen, while the uric acid and creatinine were still within normal limits. In explaining this statement I wish to say, that in the course of the metabolism, the purine bases become at first converted into uric acid, a large part of which is excreted in the urine. In cases in which the glomerular apparatus is impaired, part of it is retained in the blood which is subjected to further oxidation forming dialuric acid and in some cases also allan-

toin. These substances are finally decomposed by an enzyme, uricase, to urea. Under pathologic conditions, therefore, urea accumulates in relatively higher levels than does uric acid (See Table I, 9, 10, 11).

Creatinine is a nitrogenous product, not formed from food, but resulting exclusively from the breaking down of the tissues. There are different views about the formation of creatinine. The suggestion that creatinine is formed in the body from guanidine at a constant rate and then hydrolyzed into creatine which in return is stored in the muscles, seems to be correct. When the muscles become saturated with creatine, the excess of creatinine is excreted in the urine at a constant rate of 1.5-1.8 grams per 24 hours. The normal range of creatinine in blood is from 1-2 mg. per 100 cc. The rise of creatinine in blood as well as the rise of the constant rate of excretion in the urine gives us an estimate of the rate at which the tissues are breaking down in diseases. Creatinine values over 2 mg. per 100 cc. of blood are indicative of impairment of renal function, values over 3-5 mg. indicate a grave condition with some rare exceptions.

Although the degree of retention of creatinine and urea in grave kidney diseases often run parallel, this is not always true, because creatinine is exclusively of endogenous origin while urea is of endogenous as well as of exogenous origin (derived from food).

Before closing the discussion of N.P.N., reference may be made to uric acid nitrogen. Whenever a case in question does not present findings of nephritis but shows an increase in uric acid nitrogen, the attention must at once be turned to a possible diagnosis of gout. Since in gout, uric acid alone is increased while all the other non-protein nitrogenous components remain at normal levels.

Referring to Table I, 11, you will note other conditions in which an increase of uric acid may be found.

In consideration of a case as a good or bad surgical risk, the following values should be kept in mind: 60 mg. or more of N.P.N. per 100 cc. of blood are considered a pure surgical risk, while values over 100 mg. contra-indicate surgery.

Indican: Table I, 12. Among the reactions brought about by intestinal bacteria the most important one is the attack on the molecules of tyrosine and tryptophane. The bacteria split off portions of the side chains of these amino-acids and the residual substances still containing the ring are no longer oxidized in the body. The result is the formation of phenol and cresol from tyrosine and indoxyl from tryptophane. Phenol, cresol and indoxyl are too poisonous to be allowed to pass into the systemic circulation. Absorbed from the alimentary canal they reach the liver where they are coupled with sulphuric acid, forming ethereal sulphates. The ethereal sulphates (in this case indoxyl-sulphate) are much less poisonous and can be carried in the blood without harm until they get to the kidney to be excreted. The amount of indican gives us information about the extent of bacterial decomposition in the alimentary canal.

The normal amount of indican in blood, as has been shown in our work, is 0.05-0.20 mg. per 100 cc. An excess retention of this substance indicates a pathological condition.

The determination of indican in the blood is of clinical importance in the early as well as in the late stages of nephritis. It is especially of significance in the early stages because in early stages the total N.P.N. and urea N. may still be within normal limits. If in the later stages repeated determinations of indican show a constant high level or an increase (2-4 mg.) the danger of death is imminent.

Sugar: Table I, 13. The digested carbohydrates of the food are absorbed in the form of monosaccharides (assimilable glucose) and are carried to the liver where through the action of an enzyme called glyconase, they are converted into the polysaccharide glycogen. Glycogen, or animal starch, is deposited in the liver cells in the form of granules. The stored animal starch is then gradually hydrolyzed to glucose as the percentage of the sugar in the blood falls below normal, thus keeping the sugar at a constant level. A part of the absorbed carbohydrates may give rise to fat and be stored in this form. Another part is stored in the form of glycogen in the muscles. These reserves in the muscles are quickly hydrolyzed to glucose and then transported to places where the fuel is required; in other words, where they are utilized for obtaining energy in the moment of muscle contraction.

The act of contraction does not involve an oxidation of fuel; it is, therefore, not accompanied by the formation of carbon dioxide. As a result of contraction, lactic acid is produced.

The accumulation of lactic acid in the muscles is associated with the appearance of fatigue. If oxygen be admitted to the muscle after contraction, lactic acid disappears and CO_2 is produced. Excessive excretion of lactic acid in urine takes place in eclampsia, pernicious vomiting of pregnancy, acute yellow atrophy of the liver, and other conditions associated with severe injury to the liver. A possible further step in oxidation of lactic acid is pyruvic acid which is converted into acetaldehyde. This acetaldehyde is then oxidized to acetic acid, diacetic acid and finally to carbon dioxide and water.

The most important type of disturbed sugar metabolism is diabetes mellitus. The normal concentration of glucose in the blood is 90-120 mg. per 100 cc. at which level practically no sugar appears in the urine; but if the concentration is increased above this threshold the kidney cannot retain it. In some cases of kidney damage the sugar is allowed to escape even if the sugar is within or below the normal threshold in the blood. On the other hand when much sugar is eaten it so swamps the liver that it cannot be converted into glycogen quickly enough and therefore, the sugar content of the blood rises above the normal level and appears in the urine (alimentary glycosuria).

In diabetes mellitus the changes seem to center about a dysfunction of the pancreas, in particular of its inner secretory part, the islands of Langerhans. The secretion of these islands determines the burning up of the glucose in the tissues. If the secretory activity of the islands is diminished the tissues no longer have the power of using glucose as a fuel, the result being the accumulation of excess sugar in the tissues and blood and the excretion of sugar through the kidneys.

If the stored glycogen has been used up and the tissue proteins begin to break down the keto-acids derived from them may be used as a source of glucose. On the other hand when sugar is not being oxidized the oxidation of fats is also interfered with and becomes incomplete. Instead of being burnt up to CO_2 and H_2O the fatty acids give rise to the formation of poisoning substances such as acetone, aceto acetic acid and B-oxybutyric acid which are responsible for the depletion of alkali reserve and lead, therefore, to acidosis.

Hyperglycemia also is frequently found in nephritis, hyperthyroidism, pancreatitis and some infections while hypoglycemia is observed in hypo-function of the thyroid, adrenal, pituitary glands, after overdose of insulin and in cases of tumors of the islands of Langerhans.

When blood determinations show a high retention of nitrogenous products, high value for sugar and a low CO_2 combining power, surgical intervention is not advisable.

Cholesterol: Table I, 14. The lipoids such as lecithin and cholesterol are intimately associated with the metabolism of the neutral fats. *Lecithin* is present in practically all the cells and tissues, and in blood and it is increased especially in Niemann-Pick disease. It consists of one molecule glycerol, one each of stearic and oleic acids and phosphoric acid and one molecule of a basic substance called choline. As lecithin contains phosphorus it is a phospholipin. The task of phospholipines is to make the framework which supports the protein constituents of cell protoplasm. It is able to do this because it is a hydrophobic colloid and does not mix with the cell protoplasm. *Cholesterol* is the chief member of a group of substances named sterols, isolated from various plant and animal tissues. Because of its widespread occurrence in bile it received its name cholesterol. It combines with glucosides such as digitonin, saponin and with other hemolytic substances as bile acids, neutralizing their toxic action and protecting the blood corpuscles. It has, therefore, a therapeutic value in hemoglobinuria and anemia. It checks the action of lipolytic enzymes protecting the lipins of the cell from digestion. As a constituent of bile, it helps in the absorption of fats from the intestines, as a constituent of sebum of the skin, it protects the epidermal structures. It plays also an important part in the Wassermann reaction. It differs from fats and lecithin in not being hydrolysed when heated with alkalis. Its normal range in blood is 140-200 mg. Increased cholesterol is found in lipoid nephrosis, cholelithiasis, pregnancy, xanthomatosis, in

diabetes with acidosis and some cases of carcinoma. Its range is decreased in pernicious anemia, acute infectious diseases (Pneumonia), in prolonged starvations and in wasting diseases (Addison's disease and severe cases of exophthalmic goiter).

Icterus Index: Table I, 18. The blood normally contains bilirubin in the amount of about 1 gr. to 200,000 liters of blood. This ratio is called the icterus index. The normal icterus index varies from 4-6.

The icterus index determines the bilirubin content of the blood. The actual ratio of bilirubin in the blood is estimated by the use of a standard solution of $K_2Cr_2O_7$ (1:10,000).

In cases of severe icterus the index may rise to above 200. If bile is suspected in the blood a Van Den Bergh test should be performed before making the quantitative determination since the Van Den Bergh test permits the differentiation between obstructive and hemolytic jaundice. If the untreated serum gives with Ehrlich's reagent an aldehyde reaction, this indicates an obstructive jaundice (direct reaction). If the reaction occurs only after precipitating the serum with conc. alcohol, it indicates a hemolytic jaundice (indirect reaction).

Ca Potassium—NaCl: Table I, 15, 16. Life processes in tissues have been found by Ringer to be dependent on the concentration of the inorganic ions with which they are in contact and particularly of the ions of sodium, calcium and potassium. A solution containing sodium chloride, calcium and potassium in such proportions that their antagonistic tendencies are suitably balanced provides the best environment for the function of the heart muscle and of the other tissues. Such an optimal balanced salt-solution is the blood.

Ringer made the interesting observation that the calcium of his perfusion fluid could be replaced by an equivalent amount of strontium in maintaining the heart beat. It seems therefore, to be evident that it is not the calcium which is necessary to the tissue but that it is the effect of some property common to the Ca and Strontium ions which is required for the maintenance of normal activity. The low content of calcium associated with tetany is not due to an insufficient supply of calcium but to an abnormal relation between the blood calcium and the permeability of the gastrointestinal tract. With low calcium values this permeability is increased, leading to the entrance of proteinogenic toxins into the blood stream which toxins are held responsible for the production of the symptoms of tetany.

Phosphorus: The normal range is 2-5 mg. per 100 cc. The amount of inorganic phosphate is lowered in rickets. A low content of phosphorus hinders a proper calcification of the bones.

Chlorides: Sodium and potassium are the most abundant inorganic ions in the blood. To a great extent they unite with chloride, bicarbonate and phosphate for holding the proteins in solution. The potassium salts are present in the red corpuscles and the sodium salts occur as well in the red cells as in the blood plasma.

Bromberg (Journ. d'Urol. 1914, IV-733) has shown that the amount of sodium chloride of the urine is twice as large as the amount of sodium chloride contained in the blood plasma of normal persons. This relation of 1:2 is called "Hemorenal index." Variations of this index, he believes are the first indications of renal insufficiency.

The normal value of chlorides from the whole blood is 450-500 mg. and for the plasma 560-600 mg. per 100 cc.

Blood chlorides are increased in anemias, nephritis, in certain cardiac conditions and in prostatic obstructions. The determination in these cases aids in deciding whether a salt free or a salt modified diet should be ordered to restore the chloride value to normal. A decrease of chlorides is noticed in diabetes, in fevers and in toxemias which are frequently associated with disturbances of the gastrointestinal tract. A fall in chlorids is further noticed in disturbances of the gastrointestinal motility, in peritonitis, in strenuous vomiting and tends to be associated with a rise of N. P. N. and a severely toxic alkalosis, caused by a rise of the carbondioxide combining power. It seems to be advisable in these cases to order not only a chloride estimation but also a N. P. N. and CO_2 combining power determination.

CO_2 Combining Power: Table I, 19. As long as the amount of the alkalies (Sodium bicarbonate, dipotassium phosphate and the alkalies of protein) present in the blood and known as the "alkali reserve" is sufficient to secure the faintly alkaline reaction of

blood and to maintain the hydrogen-ion concentration at a fairly constant level ($pH_{7.8}$-$pH_{7.5}$) the CO_2 capacity of plasma per 100 cc. fluctuates between 75 and 53 volume per cent.

Due to the formation of excessive amounts of acid substances in a disturbed metabolism the CO_2 combining power of the plasma and the pH value may become markedly diminished. This state constitutes "acidosis" and the degree of the alkali-reserve is, therefore, a direct index of the degree of the acidosis. When the reading by the Van Slyke method is less than 53 volume per cent. it signifies an increase of carbonic acid in proportion to NaH CO_3 present in the blood. The patient is, therefore, inclined to acidosis. If the reading is more than 75 volume per cent, it signifies the reverse that is, an increase of NaH CO_3 in proportion to carbonic acid and the patient begins suffering from "alkalosis."

A mild acidosis shows a CO_2 capacity of 53-40 volume per cent.

A moderate acidosis shows a CO_2 capacity of 40-30 Vol. per cent.

Symptoms of a severe acidosis are shown below 30 Vol. per cent.

Acidosis may occur in cases of 1. excessive formation of acetone bodies (oxybutyric acid and diacetic acid) in advanced stages of diabetes mellitus; 2. excessive retention of lactic acid in cases of pregnancy and in incomplete pulmonary aeration due to pathologic conditions of the lungs. Acidosis due to formation of lactic acid may also follow an anesthesia. 3. In cases of an excessive decomposition of proteins and formation of keto-acids in severe fevers; 4. in cases of an excessive retention of inorganic acids (acid phosphates) due to a defective elimination of acids by the kidneys as in nephritis; 5. in cases where a considerable loss of alkali takes place as in severe diarrheas.

A preliminary determination of the hydrogen-ion concentration of the blood serum serves to recognize the presence of an acidosis which has not been compensated by pulmonary activity in removing CO_2 or has been caused by a defective neutralization of the retained acids.

A condition opposite to acidosis but quite as serious in its effects upon the body is "Alkalosis." Alkalosis may occur 1. as the result of an excessive removal of carbonic acid by way of the lungs (psychic disturbances, excessive crying); 2. by excessive loss of hydrochloric acid and sodium chloride in strenuous vomiting in which cases the blood is left with a deficiency of chlorides and an excess of bicarbonate; 3. by excessive intake or administration of alkalies in treatment of acidosis, by overdosage of calcium or sodium carbonate in the Sippy treatment of peptic ulcer particularly when renal function is impaired; 4. alkalosis appears also in toxic conditions of pyloric obstruction and other disturbances of the gastrointestinal motility which are often associated with tetany.

SUMMARY

1. The normal and pathological ranges of the extractive and mineral blood constituents are seen in Table I.

2. The interpretations of formation and retention of these substances in the blood are given in the discussion.

3. The determinations that are advisable in special cases of diseases are indicated in Table II. The determinations are listed by numbers according to rank of importance.

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SOME USES OF PICRATOL WITH SPECIAL REFERENCE TO CHRONIC OTITIS MEDIA

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My reason for presenting this article to the profession is to bring to its attention what seems to be a more satisfactory antiseptic for certain things, especially for the treatment of otitis media, of the chronic non-specific type, than we have had heretofore, and perchance to stimulate interest in its use by others, some of whom, being ear specialists, can more quickly obtain data on a series of cases large enough to be of certain value in determining the merits of this treatment.

So far as I am able to learn, this antiseptic, picratol, has not been used in the treatment of otitis media before. At least, I can find no references to it in the literature and one of our foremost ear specialists in this city apparently not only had never known of its being used in treating otitis media but was not even familiar with the name of the drug.

That, however, is not surprising when we realize that the company that manufactures it sells it only in the form of suppositories for urethral and vaginal treatment. Whether the research department of this company has ever advocated or experimented with its use other than in suppositories I am unable to say, except that I understood from the advertising material the company sends to physicians that the drug is put on the market only in these two suppository forms.

The chemistry of picratol is of interest, and, by comparison, gives an idea what to expect of it in biological or therapeutic uses. The following chemical data was very kindly furnished me by John C. Bird of the department of research of John Wyeth & Brother. Picratol is the silver salt of picric acid, or silver trinitrophenolate, with the formula C_6H_2 (O Ag) $(N O_2)_3$. A saturated aqueous solution of picratol at room temperature is approximately 1% in strength and has a bright yellow color, as have the glistening flake-like crystals themselves. The solution stains skin and mucous membrane bright yellow. The crystals burn readily, possess a bitter taste, and a very slight disagreeable odor. The dust is somewhat irritating to the respiratory passages. This is not true of the aqueous solution, which does not irritate the respiratory mucous membrane and has scarcely enough odor to be detected. Picratol contains about 30% of its weight of silver. It ionizes to some extent in aqueous solution, giving a silver cation and a trinitrophenolate anion. So in the solution we have mainly the silver trinitrophenolate molecules, some silver cations, some trinitrophenolate anions, and some picric acid molecules.

Theoretically, therefore, we might expect some biological action from any or all these constituents. We might expect the antiseptic results that silver salts usually possess; and, also, the picric acid effects which are antiseptic and inimical to the growth of excessive granulation tissue as is seen in the picric acid treatment of burns, and a stimulatory effect on epithelial cells which would help greatly in the closure of perforations of the tympanic membrane.

A black precipitate of silver forms in the aqueous solution of picratol on long standing and, hence, it should be prepared in small quantities so that it does not stand too long before it is used.

The above mentioned constituents and properties of picratol, I believe, are the reasons for the apparently superior results mentioned herein, and should prove to hold true in a large series of cases if painstaking care is used in applying the treatment which I shall herein describe in detail. And I predict that the most favorable results will be obtained in those cases of otitis media in which there is a tendency to the production and recurrence of granulations in the ear, and which granulations are, to a large extent, the cause of the chronicity of the disease.

Let us consider a few specific instances in which it was used and set down a detailed description of each case and its management.

C. B., Jr., about 17 or 18 years of age, was seen at his home the latter part of March, 1930. He complained of general malaise, nausea, vomiting, and had fainted that morning. He said he had a "cold in his head" and that his right ear had been discharging pus nearly all the time since the latter part of 1926. The left ear had begun to discharge soon after the right one started. He had had several long series of treatments by two different well known E. E. N. & T. specialists. Treatments were given two and three times a week. Once or twice the discharge seemed to be entirely cleared up but would start again shortly after

the treatments were stopped. About January, 1929, a radical mastoid operation was done on the left side by one of the E. E. N. & T. specialists. A left sided facial paralysis was present after the operation and has remained permanently with only slight or no improvement, although massage and electrical treatments were used for many months afterward.

The left ear healed entirely but complete loss of hearing was present. Later the purulent discharge recurred slightly and both ears continued to discharge with only short intervals of quiescence occasionally. The left ear was not discharging at the time I saw him. The physical findings were as follows.

Temperature 99.2. Purulent discharge draining from the right ear. Hearing in right ear poor. Medial end of left external auditory canal seemed to be filled with scar tissue. No tympanic membrane in sight. No discharge from left ear. No hearing in left ear. Left sided facial paralysis present. Healed scar of left mastoidectomy present. Nasal mucosa subacutely inflamed in both nares. Muco-purulent discharge present in both nares. The colon was tender and spastic. X-ray examination a few days later revealed a "chronic, destructive, infectious process involving the right mastoid region"; "absence of all septal partitions"; "hyperplastic involvement at region of periantral cells". Also a large mucocele arising from the floor of each maxillary sinus and slight amount of fluid in the left maxillary sinus.

The tonsils had been removed. The patient was somewhat under weight and slightly anemic. Smears and cultures made from the right ear revealed staphylococci. Otherwise, the history and physical findings were irrelevant. The management of the case was as follows. Appropriate diet and treatment for chronic spastic colitis was begun.

General and local treatment for the rhinitis and sinusitis were carried out, including several irrigations of the maxillary sinuses.

Details of these measures will not be given here because of space needed and because they are not in line with the points I wish mainly to bring out.

An autogenous vaccine was made from the staphylococci cultures from the ear and increasing doses of this were given hypodermically every second or third day until about twelve doses had been given, the last several doses being about 2 c.c. each.

The right ear was treated two and three times per week from about the first of April, 1930, till June 12, 1930. Many times the small central perforation in the right tympanic membrane, exposing the manubrium of the malleus to direct view, was enlarged by making an incision downward and backward from its lower posterior margin to facilitate drainage and irrigation of the middle ear with the various antiseptics in general use in middle ear disease, including solutions of argyrol, silver nucleinate, hexylresorcinol, hydrogen peroxide, alcohol, boric acid and mercurochrome. No marked change was seen in the amount or character of the discharge during the ten weeks of treatment. The tympanic membrane continued to be thickened and hyperemic, with a slight tendency to the growth of granulation tissue on its medial surface, and about the margins of the perforation.

I was continually in search of something that would give better results. So, reasoning that picratol in an aqueous solution might be a good antiseptic as well as a good agent to inhibit the growth of granulation tissue, I decided to try an aqueous solution of picratol in this ear. Accordingly, I obtained a small supply of the crystals.

I used it in ½ to 1% aqueous solution, and irrigated the middle ear with a small calibre canula through an otoscope, keeping the end of the canula under direct observation at all times. The canula was inserted through the perforation in the tympanic membrane and the solution slowly forced into the middle ear by gentle pressure on the syringe bulb. The excess of solution returned into the external ear through the drum perforation. A small amount usually passed into the nasopharynx through the Eustachian tube. This was sometimes repeated several times at a sitting, the external auditory canal being swabbed out before each irrigation so the canula could be seen and guided under direct vision. The middle ear and part of the external auditory canal were filled with the solution and the patient kept lying on the opposite side for ten to fifteen minutes after the last instillation. Then a cotton plug was inserted and the patient allowed to go, having been instructed to remove the cotton later. Treatments were repeated every second, third, or fourth day, depending on the amount of discharge. The patient was given some of the picratol solution and instructed to put several drops in the ear once daily on the days he did not come to the office for treatment and to lie on the opposite side for ten minutes following his instillation to allow the medicine to run into the middle ear if possible. The patient was told to have some one at his home cleanse his ear canal first by putting a little hydrogen peroxide into it, allowing it to effervesce, mopping it out with a cotton swab, then repeating this several times until the canal was free of pus and dry. Or, he was told to irrigate the external canal with boric acid solution after using the hydrogen peroxide, then dry the canal. This method of cleansing the external auditory canal and the middle ear cavity of pus and mucus was used at the office also except when wiping with a dry cotton applicator seemed to cleanse it sufficiently.

On some occasions the ear was cleansed with peroxide and boric acid, and then the picratol solution was instilled and allowed to remain with no repeated irrigations. In cases which have a large perforation in the ear drum or in which a long incision has been made in the membrane the irrigating solutions will go into the middle ear and cleanse it sufficiently without carrying the end of the canula into the middle ear cavity. The external auditory canal and the middle ear should always be dried well before the picratol solution is instilled.

This patient received four treatments with the picratol solution, then wanted to discontinue them because he had a chance to go to Georgia on a two weeks' vacation trip. I told him to go ahead and return to

me when he came home and we would continue the treatments then.

When he came again in a little less than three weeks he said the ear had ceased discharging soon after he arrived in the South and had remained dry. On examination I found the ear dry and the perforation completely closed. And thus it has remained to this day which is over two years after the treatments were given. His hearing in this ear improved very much since the ear healed. After the first treatment with picratol there was less discharge when he returned. This was not given much consideration because the amount of discharge had varied considerably before. After the second treatment the discharge had not decreased in amount when he returned but contained a much higher percentage of mucus and lower percentage of pus. The next observation showed very little if any change. Then he was not seen again until three weeks later when the ear was dry and healed.

This seemingly wonderful result was not credited to the treatment much because it was thought that being in the hot dry climate of Georgia may have been a very large factor in the healing.

A second case, E. B., female, 6 years old, was brought to me October 10, 1931, with a purulent discharge from both ears which had been present for seven months and the following history was obtained. About seven months ago the child became irritable, had a poor appetite, was under weight and pale, and began to have a purulent discharge from both ears without having complained of ear ache. The mother noticed the material on the child's pillow and thus traced its source to her ears. She was immediately taken to an ear specialist, and so for the past seven months she had been continuously under an ear specialist's care. Three different well known E. E. N. and T. men had treated the ears two and three times a week. About five months ago the child's tonsils and adenoids were removed. It was hoped this would help stop the ear trouble. About that time, also, an excessive growth of granulation tissue was removed from each ear. This reformed in spite of continued treatments. The child was also on general supportive treatment in the form of cod liver oil, much exposure to sunshine when possible, guarded exercise, etc. During this regime she had improved slightly in her appetite, disposition and weight, and was not so pale as at first, the mother stated. At this time the child's parents were almost hopeless of getting any results by having the ears treated, as there had been no improvement in the seven months of constant treatment. Also, the financial drain of these treatments, together with the results of business depression, was making it almost impossible for them to continue the treatments, especially when no improvement was in sight.

Consequently, they wanted me to look at the ears and tell them whether I thought it would be safe to discontinue all ear treatments and just cleanse the ears at home and hope that they would some day heal through Nature's own efforts.

On examination I found thick green-yellow-gray pus in both ears, there being more in the right ear than in the left. After wiping the pus out of the external auditory canals I saw a large perforation in the lower posterior quadrant of the right tympanic membrane, the entire quadrant or more being destroyed. The margins of the remaining portion of the drum were very thick, hyperemic, and lobulated due to excessive granulation tissue growth on the drum and in the middle ear cavity. The left tympanic membrane was hyperemic and apparently thickened, but no perforation could be seen. It was concluded that the perforation in this drum must be small and in the anterior part because that was the only part that could not be seen, due to the curved course of the external auditory canal. No granulation tissue was seen in this ear.

The mucous membrane of the nasal passages was hyperemic and tumescent. There was some muco-purulent discharge in each naris.

The rest of the history and physical findings have little or no bearing on the conditions to be discussed herein.

So I told the parents that I thought it best that some doctor see the child once every week or two, at least, if they could not continue the regular treatments.

I later told them of the case I had treated with this new remedy as described above and of the results; and, that I did not know whether their child would be benefited similarly by it or not but if they decided to try it to come back later. Two weeks later they returned with the child and wanted to give this new antiseptic a trial.

At this time it was seen that the granulation tissue had increased in the right ear, and the left ear showed small amount of pus but no granulation tissue in sight I gave the parents some of the picratol solution and instructed them to cleanse the ear canals with hydrogen peroxide and boric acid solution twice a day and to instill a few drops of the picratol solution afterward once a day. When they returned one week later the granulations had increased in the right ear and a clump of granulation tissue was showing up in the anterior part of the left external auditory canal just outside the drum. The purulent discharge had increased in each ear. I saw that nothing would be accomplished unless the granulations were removed. They were becoming so extensive that I deemed it best to take the child to a hospital and remove them thoroughly at one sitting under a general anesthetic. After one more week of care at home with no improvement and an increase in the granulation and deafness the parents were willing that this be done. On November 11, 1931, under nitrous oxide anesthesia part of the granulations in the right ear were plucked away with ear forceps. But the base or bases from which they grew seemed so wide and

scattered that this was not successful. They seemed to have eroded away much more of the tympanic membrane. So the electro-coagulating current was applied to them by touching the electrode to the forceps while it grasped the tissue. This was done as extensively as I dared to do it and not destroy the normal contents of the middle ear. I was able to extract much more of the tissue after it had been electro-coagulated. The tympanic membrane was found to be half destroyed by the encroachment of the granulation tissue.

Into the left ear, a small cotton applicator was inserted and twisted a bit and the entire clump of granulation tissue about 2½ mm. in diameter came out. It apparently had a narrow pedicle which broke easily. I could not locate the base of the pedicle or the perforation in the drum. They could only have been at the extreme anterior lower margin of the drum for that was the only part that could not be seen.

I deemed it wise to make a long incision in this drum to get a large opening for better drainage, irrigation, and instillation of the picratol. Therefore, a long incision was made in the posterior portion of the drum and then both middle ear cavities were thoroughly irrigated with boric acid and then dried and filled with picratol solution.

I then treated the ears every second day as I have described above and the mother treated them on the intervening days as I had instructed her to do. As the discharge decreased I increased the interval between my treatments.

In two and one-half weeks from the time of this operation the left ear was entirely free of discharge and granulations and the membrane was completely healed.

The right ear produced a profuse watery discharge for several days following the electro-coagulation, which gradually decreased and changed to a thick purulent discharge again. This gradually decreased in amount. After the coagulated granulation tissue had sloughed off a very small amount of granulations were found at the base. These were touched three or four times with solid silver nitrate and this completed their destruction. They showed no more tendency to grow. In five weeks from the time of operation the left ear was completely dry and free of granulations and the wide perforation of the drum was completely bridged across. Both ears have remained well to this day which is nearly a year from the time they became healed.

The child's hearing is practically normal in both ears. No extremely delicate test was made of her hearing but ordinary tests with spoken and whispered words showed hearing of a normal average acuity.

A third case of chronic otitis media of four year's standing will be mentioned, although it is hardly a fair test case.

Mrs. M. H., 24 years of age, came to me because of a purulent discharge from the right ear on December 7, 1931. About ten days before this the ear became very painful. It soon began discharging profusely but had almost ceased discharging when I saw her. Examination revealed a large elliptical perforation in the lower posterior quadrant of the right tympanic membrane, a small amount of muco-purulent discharge exuding through the perforation. There were no granulations. I had taken care of this patient for several months preceding this visit for several other illnesses including prenatal obstetrical care and delivery of the baby, which was her fourth child, spastic colitis, recurrent exacerbations of chronic pyelitis and ureteritis mainly on the right side, cystitis, urethritis, retroverted uterus, mild chronic bilateral saplingitis, chronic appendicitis, endocervicitis with cervical erosion and profuse vaginal discharge, hemorrhoids, frequent colds often with sinus involvement, anemia, etc. So it is very evident that she was in poor health generally and had been so for a long while. Furthermore, she was one of the county's charity cases and did not get proper food or care at home. In fact many times she and her family were almost without food from one to three days at a time. She could neither buy medicine if it were prescribed nor pay street car fare to come to my office regularly for treatments. Other things that interrupted my care of this ear condition were recurrent furunculosis in both external auditory canals during which times the canal was swollen shut or nearly so thus making treatment of the middle ear impossible; and an operation upon this patient at which time the following procedures were done. The cervical canal and the eroded area on the cervix and a nabothian cyst were electro-coagulated; a perineorrhaphy was done; also, a hemorrhoidectomy; an appendectomy; a supravaginal hysterectomy was performed, the right ovary and both Fallopian tubes being removed with the uterus, which was large and boggy, because of replacement of the right ovary by an oval cyst, which measured about nine by seven by seven centimeters, and the tubes were slightly thickened and hyperemic. There was also a small fibroid on the left round ligament at its junction with the uterus. The left ovary was not removed although it was filled with small retention cysts. The appendix was bound down by a band of adhesions across its middle portion. Two nevi were excised from the skin, also. She recovered from these procedures uneventfully with the exception of a slight flare up of her pyelitis two weeks after the operation.

There have been signs and symptoms at times which would indicate that her right mastoid cells harbor a chronic infection also. I have never been able to get an x-ray picture of her mastoids and sinuses due to her lack of finances.

About six weeks ago she had a severe attack of the urinary tract infection and showed blood in her urine for the first time. I was unable to induce her to go into the county hospital for care, observation, and diagnosis; and lack of finances prevented her from going into any other hospital.

A few days ago she returned to the office with a severe subacute rhinitis and apparently involvement of the maxillary and frontal and ethmoidal sinuses. The cold started about four weeks ago she said, and was still quite bad, and both ears were discharging slightly.

So it is evident that she has been in ill health most

of the time due to various pathological processes, all of which made her resistance low and the chance of curing her otitis media less. This had been treated four years ago at the time it started by an E. E. N. & T. specialist for a few months with no improvement; and again, shortly afterward at one of our best ear clinics for several months with no improvement. She was told at this clinic by the doctor in charge that she had a tuberculous infection in her ear and it would be impossible to cure it.

Smears of the pus from her ear showed pus cells, mucus, abundant staphylococci, and an occasional unidentified slender bacillus a few of which were slightly clubbed and beaded and all of which were Gram positive and non-acid-fast in staining qualities. Of course, the patient could not pay to have further bacteriological study made to identify this organism or guinea pig tests for tuberculous infection.

So I repeat that this case is hardly a fair test case. I might add that by treating her ear as I have indicated in the other cases the discharge ceased completely for seven weeks one time and five weeks another time. Previous to this treatment it had never remained dry more than one, two or perhaps three weeks at a time, the patient stated. If one could treat it regularly and persistently every second day, and perhaps facilitate drainage and irrigation by enlarging the perforation in the drum by incising both upward and downward from the perforation a permanent cure might be accomplished in this case. On the other hand, the condition in her nasal passages and sinuses and mastoid, as well as the more remote pathology in the urinary tract might require complete healing before the otitis media could be permanently cured.

Concerning other uses of the aqueous solution of picratol, suffice it to say here that I have used it in several cases of acute suppurative otitis media where drainage through the tympanic membrane had been established spontaneously or by paracentesis with uniformly good results, complete healing, cessation of suppuration, and closure of the perforation in the drum in every case.

I have used it with very favorable results for post-operative treatments in a turbinectomy case by putting a gauze pack dripping wet with the picratol solution into the nose and allowing it to remain about twenty minutes. Theoretically considered, it should prove very satisfactory for this as well as middle ear work.

I have also used picratol in aqueous solution in other conditions with satisfying results but I shall not take space here to mention them. They may be embodied in a later report.

The one main disadvantage of picratol solution when used for ear and nose work is its bitter, disagreeable taste noticed by the patient when some of it runs down into the pharynx through the Eustachian tube or through the posterior nasal passageway. Adults do not mind it but children dislike it very much.

In final comment I wish to emphasize the following points. I have stated clearly that these patients were treated for long periods of time by well known E. E. N. & T. men to show that these patients must have had good treatment, the best that is known today, and that it was not because they had had poor treatment that they did not get well before I saw them.

Also, it is my aim and hope by publishing this paper to stimulate enough interest in this drug to get other physicians, especially E. E. N. & T. specialists, to try it, for they could much more quickly accumulate data on a series of cases large enough to be of real value in determining whether this treatment is of special merit. And I believe all would gladly welcome any sort of treatment that would prove to have more beneficial effect on chronic otitis media than the drugs that are now used for it. I hope we may soon see and hear further reports from others after they have tried picratol in aqueous solution, for it is evident that these few cases I have reported herein are not enough on which to draw any conclusions except that the treatment certainly deserves further trial.

4770 Lincoln Avenue.

ANOTHER FISH STORY

"How many fish was it that you said you caught Saturday, Ernest?"

"There were six of them dear. Don't you remember?"

"Yes, that was what I thought you said, but that fish market has made a mistake again. They've charged us for eight."

She: "It's nearly six weeks since baby was born. Have you told the registrar yet?"

He: "If the registrar lives anywhere within ten miles' distance he'll know already."

ARGYRIA

Associated with a heretofore unreported colloidal silver preparation

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CHICAGO

It has been established that colloidal silver preparations may cause argyria. Argyrol, collargol, and protargol are the only colloidal silver preparations reported[1] to be associated with this condition. The only reason for publishing the following case is because of its being associated with a preparation heretofore unreported.

During the past ten years the *Quarterly Cumulative Index* has not included a report of argyria associated with neosilvol administration. Neosilvol was first put on the market in 1921 and has since been put into widespread clinical use. The following report may lead to the habit of a word of caution being given to the patient lest he think he may use a silver preparation indefinitely and in any quantity.

Case I. Man S. C. K., aged 49 years. History of head colds and sinusitis for years. Frequent antrum irrigations had cleared up his sinusitis but congestion of nasal mucous membrane persisted. On September 26, 1927, the patient went to his nose and throat doctor for the nasal condition and received the following prescription:

Antipyrine .....Gr. XI.
Neosilvol .....Gr. L.
Aqua qs ad.....Oz. I.
M. et Sig. One drop in nose with eye dropper.

This medication relieved the patient of his difficulty in breathing through his nose, but the condition returned when the medication was stopped for a few days. On resumption of the treatment it was found that several drops were better than one and so the patient established the habit of a few drops in each nostril twice a day and continued this practically every day since September 26, 1927. On close questioning it was found that the patient used about a half dropperful (approximately 6 to 8 minims) in each nostril twice a day. Some ran out of the nose and some ran back into the nasopharynx and was expectorated. However, much of the time it was swallowed. He had the prescription refilled many times—so often that he got it filled in 6-ounce and later in 16-ounce bottles. On rough estimation, I have calculated that the patient used 200 to 300 grams of neosilvol in the past three and one-half years.

I first saw the patient in September, 1930, for a cold and marked fatigue. At that time his face seemed to be of a slate grey color. His sister informed me that he had been using the above white medicine in his nose every day for years. He was advised to discontinue the use of these drops. Recovery from the cold was prompt, but fatigue persisted. Several abscessed teeth were removed and the fatigue disappeared. Subsequent examination in October, 1930, disclosed a rather dusky countenance.

In February, 1931, the patient was seen following an attack of food poisoning with vomiting and diarrhea. At this time his face was ashen grey on a rather pale background. He had continued the use of the drops in his nose since he was uncomfortable without them. At this time the patient was told of further sequelae to the continued use of this prescription and was emphatically urged to discontinue its use. An ephedrine-containing ointment was supplied to replace the drops.

Subsequent examination March 3, 1931, revealed a definite slate color of the patient's entire head and face above the collar line. This was not so marked as when observed with the pallor of his face induced by the vasomotor reaction accompanying his food poisoning. His body and hands were not discolored. The nasal and pharyngeal mucosa were not discolored. The teeth were dark but otherwise normal and the gums were normally pink. The slate grey color of the head was still present September 15, 1932.

CONCLUSION

A word of caution should be given with the prescribing of all silver-containing preparations so that the patient will not be in danger of developing argyria. It should be noted that the dosage used by this patient was far in excess of that prescribed by his physician.

122 So. Michigan Ave.

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INCIDENCE OF PULMONARY TUBERCULOSIS AMONG STUDENTS IN NURSES' TRAINING SCHOOLS*

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DECATUR, ILL.

In 1928, Wipperman sought explanation of the untoward incidence of manifest tuberculosis developing in one of his student nurse classes (1926) of the Decatur and Macon County Hospital, Decatur, Illinois. The training school had been in operation for twelve years and the occurrence of tuberculosis among the student nurses had been of such infrequency as could be considered as bearing normal relationship to the prevailing general morbidity.

Out of an enrollment of 24 students in 1926, seven developed clinical tuberculosis during their training period, the majority of whom

*Read before the Annual Meeting of the Mississippi Valley Sanatorium Association, Indianapolis, September 13, 1932, by Dr. Robinson Bosworth, Medical Director and Superintendent, Rockford Municipal Tuberculosis Sanatorium, Rockford, Illinois.

presented effusive pleurisy as their initial symptom. No others of the group showed tuberculosis subsequent to graduation.

At a loss to account for an incidence rate of 29.1%, a rate substantially higher than reported up to that time by most observers, stereo-roentgenograms were made a physical examination requirement for the admission of students to training, seeking thereby to eliminate both active and inactive cases of parenchymal disease which might be present prior to enrollment. In 1930, the x-ray requirement was supplemented with the Mantoux intradermal tuberculin test. The Training School administration embarked upon a program designed to afford increased supervision and to provide for greater rest and recreation periods, thus seeking avoidance of unnecessary fatigue. Quite coincidently a large tuberculosis ward was closed and only sporadic admissions of open cases were thereafter made. On the other hand, two months or longer of training at the Macon County Tuberculosis Sanatorium, a policy since 1923, was continued with no change in prophylatic technique though every ordinary measure against massive infection had always been exercised—not to the point, of course, of extreme contagion hospital practice.

During the four years of investigation just concluded, 96 applicants were accepted for training as nurses of whom 74 are now in training or have completed their course within this period. Twenty-five of these entrants were negative reactors, all of whom are now allergic with the exception of nine who have not completed the first year of training. Geer, Minneapolis, has recently reported a similar mounting of the allergic incidence among student nurses reaching 84.6% at time of graduation. It must be conceded, therefore, that the majority of those reacting negatively on admission to training become positive reactors to tuberculin, some earlier and others more delayed.

No case of tuberculosis has developed in the 4-year period 1928-1932, with the exception of one who received probationary acceptance with a left upper lobe inactive lesion which became reactivated during her first year of training. Obviously then, since no case of tuberculosis occurred during the period when the tuberculin tests were routinely accomplished no report can be made on the relative incidence of the disease between allergic and non-allergic students. The point, however, is quite beyond dispute, Heinbeck in 1928, covering a period of study of five years among 420 entrants, finding the negative reactors to be 11 to 16 times more susceptible to the development of clinical tuberculosis than those reacting positively. In Geer's cases, too, it is recalled that five out of six of his nurses contracting the disease in training were negative reactors.

Myers points out that the Framingham retesting program with the finding of 25% fewer positive reactors, supports the view that first infection is now beginning to appear in adult life. The halving of the national death rate from tuberculosis since 1920 is of course the responsible factor.

The "no-incidence" rate for disease in the period under study has served to lower that for the 16 year period average to 7%, a figure now within the rates reported by Myers in 1931, namely 5—12%. During this time with a student enrollment of 387, of which number 208 completed training, 15 students have developed active tuberculosis either during or just subsequent to training.

In reviewing the literature, it is found that the same interest is being taken among medical school students as with the student nurse groups, this for the fact, probably, that the question of the degree of communicability is re-entering the picture at this time when they too have been found to have a tuberculosis rate well above the line of the general morbidity rate. Opie, McPhedran, and Hetherington, in the study of 450 medical students, have found a disease incidence of 4.1% among students of the first year of medical school and almost as high in incidence among premedical students. There have been no other vocational groups investigated that warrant comparative study excepting perhaps the work of Soper and Wilson among 3,000 students entering Yale University wherein he found only 0.6% of entrants showing active tuberculosis and 1.1% among 795 students in the graduate school. As far as other reports are concerned, the incidence is higher, in most studies, among medical than students of other professions or vocations. While communicability may be suspected as playing some role in

the medical student of advanced standing, it cannot be made to account for the above than general incidence in the premedical and first year medical school classes, members of which certainly see little or no service on the wards of general hospitals or contact cases of tuberculosis in special hospitals, diagnostically or otherwise.

Reverting back to a study of our own student nurse group with respect to the factor of communicability, the literature indicts more general hospitals, than special hospitals for the tuberculous, in the matter of numbers of nurses developing tuberculosis attending the sick in the two institutions. Sachs, in 1923, in a study involving 58 schools of nursing, reports that of 206 nurses showing clinical tuberculosis, 125 were graduates of general hospitals; 36 had not knowingly nursed tuberculous cases; and 43% gave a family history of the disease. General hospitals as a rule, have had, until recently, a phthisiophobia that instead of reacting to safeguard the attendants from massive exposure has resulted in their acceptance with hesitancy and without fullest thought in the matter of their care, prophylactic or otherwise.

If we are to grant that it was the diagnosed consumptive undergoing hospital care rather than the undiagnosed respiratory case on the wards that were providing serious infection to both allergic and non-allergic students, we have even better illustrated that a complete no-incidence rate may result from care in a special hospital for the tuberculous where adequate prophylactic measures are firmly carried out, but where strict contagion disease measures are considered not only unnecessary but as returning the public to such a state of phthisiophobia that early cases return "under cover." We feel that, though subscribing fully to the slogan that "Every Case Comes From Another," the halving of our national death rate from tuberculosis may not be charged to anything that we have done in the past with respect to the communicability of the disease but rather to the educational program of the National Tuberculosis Association in serving to bring the early case into the open.

If our experiences carried on with the joint cooperation of the General Hospital and the Specialized Hospital at Decatur teach us anything, in summary they must be:

1. The non-allergic student becomes allergic in most instances before completion of his study period.

2. General hospitals should accept open cases for definitive care but approaching the problem of prophylaxis and treatment on the same basis as standard special tuberculosis sanatoria.

3. The student nurse and the medical student have entered upon rigorous study programs which entail perhaps 50% greater fatigue over a period of years, developing as this undoubtedly does a lowered resistance curve. It is felt that in the case of the student nurse group at least, where they are residents under constant observation, no training standard need be sacrificed through the adoption of a program of general health supervision.

4. It must be agreed with Myers that while the non-allergic student nurse is more susceptible to the development of the disease, tuberculosis, we must adequately protect the allergic student as well.

5. Strict adherence to the prophylaxis as practiced in our representative sanatoria must be had. While theoretically ideal from the standpoint of infection itself the most elaborate contagion hospital practice is unnecessary in tuberculosis treatment when the safeguards already cited find consistent practice.

PROPHYLAXIS OF PROSTATISM

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The magnitude and immensity of preventive medicine can scarcely be appreciated and visualized by graduates of medicine of the immediate past few years. One needs to talk to an older colleague of a third of a century's experience to conceive somewhat of the magnificence of an altruistic profession's efforts to minimize the incidence of disease, its morbidity and mortality, its sequelae and economics.

One learns from such a communication that a third of one's practice of a generation since might easily be composed of typhoid fever at certain seasons. That with seasonal variations a goodly percentage was always composed of the acute infectious diseases, such as typhoid,

diphtheria, scarlet fever, etc.; diseases which are more striking by their absence or occasional occurrence at the present time. No other body or profession has made so valiant and united attempt (and to such an extent successfully) to help their fellow beings at the expense of their very livelihood. This is as it should be, and no relaxation in the furtherance of such a laudable endeavor can be entertained. We are justly proud of so enviable a record for our profession in the elimination of untold suffering, the loss of time and life, as well as monies saved.

The magnitude and importance of the work accomplished cannot be fully realized or conceived, and it is equally important that the profession be not satisfied to rest on its laurels but continue to forge ahead in this commendable work. It is a work that is in no manner confined to research investigators and public health devotees; but one in which all members of the profession may and should lend aid. It is one of these in which practically all medical men are interested that I wish to discuss.

Together with others, I have on a number of occasions endeavored to bring before the profession the incidence, and many of the causes of prostatitis, and have insisted that the terminal and remote results of chronic prostatitis is not the negligible matter that most medical men are prone to attribute to it.

The deposition of fibrous tissue incident to inflammatory changes of years duration ceases to be a minor change as a man approaches, or passes, the half century mark, and the spectre of an operative procedure looms before one. The medical advisor of such a patient cannot be entirely free from censure who has not urged that individual as to the proper procedure to eliminate all traces of inflammation. It is common knowledge that chronic inflammation is a precursor of chronic fibrosis; an acute or sub-acute inflammation of the prostate nearly always subsides into a chronic inflammation. Infection has been found to play a decidedly causative role in vesical neck obstruction. It can play a stellar role in the inflammatory change in the glandular structure or cause a hypertrophy of the muscular element.

Microscopic studies of bladder necks have revealed the successive stages of bar formation, as well as definite hyperplastic changes in the acini and glandular elements. The microscopic picture ranging from sub-acute and chronic inflammation to definite and complete fibrosis is complete.

The anatomical structure of the posterior urethra and its adnexa is such that when one portion is involved in an inflammatory process the remainder is likewise affected, probably in varying degrees. This is the rule rather than the exception.

Histopathologic studies reveal all the gradations of inflammatory changes. The areas of suppuration, clinically prostatic abscess, and follicular suppuration denoting the acute; while different stages of the sub-acute and chronic types are readily demonstrable. Differing specimen will show polymorphonuclear lucocytes, cellular exudate, engorged blood vessels, exudative infiltration, exfoliated epithelium, plasma cells and desquamation. Cystic changes of the sub-mucosal glands, compressed acini, peri-acinar and intra-acinar cellular exudation; and round cell peri-vascular infiltration, chronic infiltrative inflammation, granulation tissue, highly vascular fibrous tissue formation, cystic dilation, newly formed fibrous tissue, and hyperplastic changes in the submucosal glands.

Much controversy ensued at one time as to the etiological factors involved in prostatism, one group contending that inflammatory influences were the sources of the trouble, while the other maintained that such could not be the case since a goodly and definite number of these unfortunate individuals gave no history of ever having had gonorrhea. Since that time we have come to realize that from 25% to 40% of cases of prostatitis are non-specific in origin,[1] and that many individuals who contracted their first gonorrheal infection had a pre-existing prostato-vesiculitis, the etiology of which has been discussed in previous communications.[1, 2]

Ewing[3] states: "The whole picture indicates a chronic catarrhal and productive inflammation with unusual epithelial growth." And again, "several features stand against the neoplastic theory for the glandular hypertrophy. This process begins diffusely or in multiple foci; it is associated with peri-glandular fibrosis, and the process is self-limited. The structure is not

that of a neoplasm, and when true adenoma arises in the course of hypertrophy it presents a very different structure. In my material, adenoma is rare in enlarged prostates."

A perusal of the changes enumerated from the histo-pathological examination indicates clearly the part that inflammation plays in either the fibrotic type or the glandular type. The latter type is considered nearer a neoplastic manifestation. However, it will be seen from the foregoing microscopic findings that glandular changes likewise follow infection and inflammation. Irritation, as is well known, plays a causative role in tumor growth, manifested in both benign and malignant neoplasms.

If my premise is correct, that infection and inflammation are a tremendous force in the causation of prostatism, then it is squarely up to the profession to greatly reduce the instances of this condition. It is possibly well to remark that the vast majority of adult males are victims of chronic prostatitis, that many of these are symptomless, or the symptoms are misinterpreted and some inoffensive organ blamed. Prostatitis can be cured under proper regime and attention; however, some cases require great diligence, skill and patience on the part of both patient and physician.

All adult male patients seeking a general examination should receive an intelligent investigation of the prostate and seminal vesicles; by far the majority will require some prostatic attention. Especially is this true of those in middle life. Every physician should be thoroughly familiar with the local symptoms of prostatitis.

55 E. Washington Street.

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THAT'S DIFFERENT

"You must have a wonderful memory to keep all that knowledge in your head," praised Gray.

"Yes," said Bray, "I never forget anything when it is once in my head."

Gray smiled artfully, and said: "Well, old man, how about that $25 I lent you some time back?"

"Of course, that's different," came from Bray. "I put that in my pocket."

NOTES ON RECENT PROGRESS IN OTOLARYNGOLOGY*

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It was my intention to review the advance of otolaryngology and to point out its contribution to general medicine; but a little reflection showed that after all most of the advances came the other way. Some pioneers of our specialty thought of it as an anatomic specialty, with its own segregated problems, with an aloofness, perhaps, from the crass disorders that affect the general economy, and with its successes in the skilful snipping of a turbinate or the courageous annihilation of an ethmoid. Such an ideal no longer holds and we realize that our boasted illuminations into cavities difficult of access, glimpse at most a small part of the total anatomic defect or perverted physiology. We must reaffirm our dependence on the physiologist, the pathologist, the internist and men in other lines, and assert our determination to keep abreast of advances in all fields of medicine and to keep that broad perspective that prevents degradation of a specialty. In that mood our review shows us that our advances are in no little measure a recognition of discoveries made elsewhere and their application to our field.

A case in point is that disease called among other names agranulocytic angina and malignant neutropenia. We pounced upon it as our own because its earliest noted lesions were in our territory. Now it begins to emerge from the studies of Schultz down to Kracke and many others that the ulcerative lesions are near the terminal stage of a process that has begun a considerable time before with a loss of the myelocytic function of the bone marrow, exhausted perhaps by repeated infections, x-rays and the gamma rays of radium and certain chemicals notably benzene derivatives. Since supplying definite chemical constituents of adenin and nucleotides leads to a striking regeneration of granulocytes and recovery in a large percentage of cases weight is added to this hypothesis.

Further study of ulcerative lesions in the upper respiratory tract has led to advances that are only now becoming generally appre-

*Delivered before the Evanston Branch of the Chicago Medical Society, October 6, 1932.

ciated. The role of the organism of Vincent-Plaut has been shown of increasing importance in lesions where it was previously unsuspected. It is of course recognized that any open lesion, especially if it has any limitation of oxygen supply, is a fertile field for the spirilla and fusiform bacilli and that these are probably more or less constantly present in the mouth and throat. Davis and Pilot found them in about 85% of all tonsils. In syphilitic lesions of the mouth they commonly live as saprophytes as well as in other types of gingivitis and tonsillitis, but it seems to me that more and more of the unusual effects about the mouth and throat not easily understood are best explained by the peculiar habits of these organisms. The findings of large numbers of them by smear and proper anaerobe culture, as well as the prompt clinical response to arsenicals would appear to prove that many of the stubborn so-called pyorrheas, the persistent subacute tonsillitis that may have a high monocyte count which confuses it with a true mononucleosis, the atypical stomatitis may bear a causal relation to these organisms. The so-called Ludwig's angina originally explained as due to the heightening of virulence of certain organisms, notably streptococcus, by infection under pressure in the tense spaces of the neck fascias especially around the submaxillary gland, was never understandable on that basis. If we assume that in the presence of an acute oral or throat sepsis anaerobic organisms advance, cause necrosis and edema which choke off circulation in the local territory and provide ideal conditions for the growth of these organisms, which can then be combated only by the widest and most radical incision, we have a more plausible explanation. In our service at Cook County Hospital we previously saw many of these cases advance to a serious condition or death. Since we have adiministered arsenicals early as a routine we have seen very few progress to the previous terrible state. Bacteriologists and pathologists, notably Davis, Pilot and Tunnicliffe have for some time emphasized the importance of these organisms in ulcerative, putrid and gangrenous states in the oral and respiratory tracts, and clinicians constantly should bear them in mind.

I have already exhibited my enthusiasm for the treatment of malignancy about the head and neck by surgical diathermy. I pointed out the advantages of diathermy and the disadvantages of irradiation, especially because it might be an easy method of exploitation and negligence, and because its use often carried the patient past the point where he might be saved by more effective measures, and temporarily buried cancer cells which might spring into new activity later. Now I think it has come to be recognized that the two fields are not so antagonistic but in a considerable measure supplementary due especially to a better understanding of the radiation sensitivity of tumors by their histopathology and grading and more knowledge of their behavior from their location and a study of their clinical course. For instance a papillary carcinoma of the tip or anterior border of the tongue if it approaches at all a mature cell type, especially if seen early offers excellent chances for cure by diathermy. If it involves the base or posterior third of the tongue, if ulcerative or fissured, if rapidly growing and if of a histologically immature type it had better be treated by irradiation. That is true also of sarcomas except fibrosarcomas, and of most carcinomas of the tonsil and pharynx, especially the so-called lymphoepitheliomas and transitional celled carcinomas. To my knowledge no series of cases can equal the recent report from the Memorial Hospital in New York of 20.4% of five years cures of carcinoma of the tonsil by radium. In my experience in the antrum the result appears better by diathermy and that appears true of all but very small cancers of the ear, face, cheek, and nose. An experience with many unhappy sufferers of improper irradiation brings home the fact that while in proper hands and in adequate amounts x-rays and radium may be very valuable, there is no place for the occasional or casual or careless user of radium.

No discussion of diathermy is complete without a consideration of the recent enthusiasm for the coagulation of tonsils. The question of removal of tonsils by surgical diathermy has been reopened by pronouncements like that of Dan McKenzie who believes that for adults it will be the method of choice, and by the discussions of Dillenger, Skillern Jr., Cohen and many others who have championed the method. One who has followed the great refinements in

technique from the early crude methods of diathermy destruction, must preserve an open mind concerning future possibilities, yet in several years of earnest effort to study all methods and see all demonstrations staged in this vicinity by reputed leaders of technique, I have not found one that in my hands with a fair background of electro-surgery, achieved routinely in tonsils not operated on a satisfactory result; nor have I seen more than a very few finished cases that I could consider passable. Like the experience with boosters of local climates, it has been my experience to see chiefly the cases claimed unusual after diathermy: the shell filled with half a thimbleful of caseous material; the pocket of creamy pus buried without drainage like that described by Novak, associated with marked cardiac disturbance and sepsis; the rather frequent scarred upper pole and plica fragments; and the not uncommon case that looked like the cautery burnt tonsil, which shows histologically minute abscesses closed off by fibrosis.

In a series of cases in which I did one side by dissection, the other by electrocoagulation at the same seance, the pain by operation was decidedly less for the one sitting, the post-operative discomfort definitely to the advantage of coagulation, and only one of the diathermy cases had troublesome hemorrhage. End results could not be compared as none of these clinic cases persisted with me until I was satisfied with the diathermy job. I use the method fairly frequently in my office to destroy flat, small tonsil fragments lying in the open fossa, yet I do this less often than formerly because of the disappointment several weeks later at seeing recurrences where I had before seen apparently completely coagulated tissue impaled on my electrode. The post-operative discomfort and reaction with these fragments is certainly less than if they are dissected and one can feel rather secure about hemorrhage.

Some statements made about diathermy of tonsils have certainly been overdrawn. No hocus-pocus of electrical equipment can make a tonsillectomist out of the unqualified, the heavy handed or the inept. No one who has not the judgment, the instrument sense, the dexterity, and the ability to visualize deeper relations that make surgery possible can find in diathermy an easy alternative to tonsillectomy, yet that is just the idea one finds in the hopeful hundreds that crowd some of the staged demonstrations.

I have not abandoned hope that I may yet find a technique of diathermy that I may honestly use for tonsillectomy and recommend to timorous patients as a proper procedure. Now I concede only one routine indication for the method—hemophilia and hemorrhagic states—and that is an extremely rare one. Occasionally a fearful patient may properly be relieved in part of mass toxin absorption by this method and the tubercular who stand operation poorly may be proper cases. For the present, I shall continue to do operative tonsillectomies on my older patients, my children, my cardiacs and nephritics where tonsil removal is advisable, with the feeling that one procedure usually finishes their trial with a minimum total of hazard and discomfort, with a belief that I have done my best to insure a complete elimination of a focus, any part of which may be dangerous, with least damage locally and to the organism as a whole.

One chapter in rhinology that is being rapidly rewritten is the one on the so-called vasomotor rhinitis. A better understanding of the intermittent turgescences of the nose permits an improved etiological classification. The intumescence of adolescence and of unstable vegetative system nervous control still stand but as of relatively little importance.

Allergic states emerge as perhaps the most salient group, not only as exemplified by hay fever, but also in those related conditions due to food or environmental proteins or secondary to bacterial infections. These in their typical states are easy to recognize by the pale, boggy membranes, covered with glairy mucoid secretion, and are easily diagnosed by their sudden onset with sneezing, profuse rhinorrhea, and blocking, the findings of many eosinophiles in the secretion and the individual or family history of other sensitization. The diagnosis of the cause is a matter of fine laboratory work, patience and the cunning of the best fiction detective, and the subject is too large to be more than mentioned here.

What does need emphasis is the frequent association of such conditions with masking infection, which itself is provocative of much harm and yet cannot be eliminated without

recognizing and relieving the underlying allergy. Many cases in point might be cited. A doctor's wife had had early in life many colds with little disability, but in the preceding five years had been so disabled by sinus infections and polyps that two of the best specialists had subjected her to quite radical surgery with only temporary relief. Inspection showed suspicious membranes, skin tests indicated marked sensitiveness to eggs, to chicken and a few other things. A few polyps only were removed. By merely avoiding the substances to which she is sensitive this patient has been well and free from nasal trouble for the last three years. A child was seen over a period of two years with infections that required opening his ear drums six times during that period. Because of colds at no time was he in school continuously for more than three weeks. Two series of skin tests failed, but a diet history led to elimination of eggs and immediately this child became free of his many colds and lost time from school only once in the next two years. A frequent experience of this kind leads me to believe that Duke's assertion that ten per cent. of people suffer from some form of allergy is not overdrawn. Results here can be achieved only by the most thorough-going tests and the elimination of all possible allergens in the smallest amounts, at least until those of chief importance are identified.

Another disturbance of nasal membranes associated often also with infections is that of glandular dysfunction of which the commonest and most typical is due to hypothyroidism. Here the membranes are swollen, reddish as a rule rather than pale with heavy bogginess that suggests the skin of a myxedema. A history is usually given of the associated general symptoms, the basal metabolic rate is low, and doses of thyroid extract, often not large, may lead to marked improvement in the membranes as well as in associated sinusitis and otitis and in general well being. In some patients blocking is a very accurate gauge of their thyroid depression.

In this condition calcium metabolism has not in my experience been typically disturbed. There is however an allied condition, perhaps due to hypoparathyroidism with lowered blood calcium in which parathormone and calcium have apparently given some relief.

Another membrane disturbance is that associated with vitamin insufficiency, especially of vitamin A, and it is not so rare as one should suspect in this prosperous community. It is seen in two classes of patients, dieting women and improperly fed children. Many workers, notably Daniels and Dean, have shown the marked susceptibility to respiratory infections of laboratory animals with diets defective in vitamin A, and the same thing holds for children. More recent work seems definitely to show that with a considerable lack of vitamin A hyalinization of the epithelium of mucous surfaces takes place, with obvious abnormality of the membranes, and a loss of their power to resist the invasion of microorganisms and a loss of protective mucus. The question of the actual loss of bactericidal power aside from an anatomic defect is apparently still in controversy. In older patients who have been trying religiously to reduce or who have been avoiding fats from real or fancied fear of gall bladder disease, unusual nasal symptoms associated with rhinorrhea colds or even sinus infections and often complicated by obscure eye symptoms, the restoration of a full diet or the supplying of cod or halibut liver oil occasionally works wonders.

The idea of Jarvis and others that perverted acid-base metabolism may lead to profound mucous membrane disturbance is supported by the occasional marked response to the giving of acid or alkali. It appears however that the basic fault may be in the buffer substances in the blood, and dietary factors, as for instance excessive carbohydrates may be at fault.

Proper ventilation or humidity are also recognized as of much importance in these nasal blockings.

Other questions of recent interest can only be listed. They include the increasing recognition of sinusitis as an important factor in non-tuberculous pulmonary disease; non-diphtheric obstructive laryngitis and tracheitis which may be epidemic in children and may require low tracheotomy and aspiration; Wittmack's theory of arrested pneumatization in infancy bearing on later mastoiditis; "petrositis," a clinical syndrome with deep retro-orbital pain, profuse aural discharge after mastoid operation and sepsis due to infection in the pneumatasized petrous apex, sometimes a

precursor to meningitis unless proper drainage is provided; the study of histiocytes and immunity in nasal mucosa; hematology in diagnosis and prognosis of sepsis, especially secondary to ear disease; advances in the study of progressive deafness. These are large subjects which might speedily involve the whole field of medicine.

This discussion has had to be dogmatic to cover the subject and has really perhaps given little more than its author's crystallized opinions on matters of recent interest. It is hoped however that we have demonstrated that otolaryngologists are after all human beings; and that they yearn for knowledge concerning human functions and the distortions thereof and their relief as do other seekers after truth in the medical field.

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SURGERY IN PULMONARY TUBERCULOSIS*

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You have assigned to me the subject, "Thoracoplasty as the Procedure of Choice After Sanitarium Treatment Has Failed." I have not asked to have the title changed because there is no way that I can state my opinion more forcibly than to deny emphatically the two insinuations of the title; first, that a thoracoplasty is to be used only after sanitarium treatment has failed; and second, that there is no other alternative than to use the conventional type of thoracoplasty in the treatment of those patients who have not been helped by sanitarium regime. Both these implications are false and should be discarded along with many other antiquated medical ideas.

Thoracoplasty should not be considered only in the light of a measure of last resort. To do so would mean that many patients will be excluded from the benefits of thoracoplasty until such a time when neither thoracoplasty nor anything else can save them. Although it is impossible for me in the brief period assigned for this talk to enumerate all the indications for thoracoplasty, I will, however, mention a few types of cases in which thoracoplasty is indicated comparatively early.

Economic conditions, in a large group of cases, are of such a nature that long sanitarium treatment is not only a hardship but a catastrophe even though a cure may occur eventually. In such cases, if the lesion is one sided and especially if there is a tendency towards fibrosis, a thoracoplasty may cut short the term of invalidism by several years and may mean the preservation of a family and the future happiness of the patient and his dependents as well. This is particularly true in families in which children are present and in which prolonged medical treatment must perforce be either in a sanitarium, or, if at home, at a definite risk of infection of the children.

There are patients in whom a positive sputum persists for a long time though they get along nicely. This is especially true when small cavities are present. These cavities are frequently subtended by broad pleural adhesions so that artificial pneumothorax is of no avail. In this type of case it is possible that medical treatment may cure the patient eventually. However, thoracoplasty may reduce the invalidism by many years, act as a method of closing the case, and finally may prevent a spread of the infection.

Patients with a unilateral infection and with repeated hemorrhages may well constitute a type of case in which the dangers and inconvenience of surgery are far outweighed by the dangers of the frequent blood loss. Therefore, thoracoplasty is indicated early.

Another broad classification of cases in which thoracoplasty is indicated early is that group in which pneumothorax must be abandoned. This group contains two sub classes, those with unilateral infection in which adhesions are forming, and those in whom an empyema has developed. In the first class of cases, it may be possible to perform a pneumolysis in a certain number of instances. In the majority, however, there is no alternative but to let the lung expand prematurely or to resort to thoracoplasty. The second class of case, namely that of empyema, is one which I consider the most difficult with which I, as a surgeon, ever have to deal. I

*From the Surgical and Tuberculosis Service of Michael Reese Hospital, Chicago.

*Paper read at the meeting of the Mississippi Valley Tuberculosis Society at Indianapolis, September 12, 1932.

feel very definitely that it is a grave mistake to attempt to cure the empyema first, and then to continue either with medical treatment or to perform a thoracoplasty. I am convinced that the only satisfactory method of treatment is to prevent re-expansion of the collapsed lung, and to perform the thoracoplasty while draining the empyema.

Finally, there is one other large group of patients in whom I think nature has pointed the way for thoracoplasty—those who are doing nicely but who still have persistent sputum and in whom a marked fibrosis of the lung is developing with a shrinking of the infected lung and a pulling of the mediastinum to the affected side. A large number of these patients will get well by medical treatment but it is especially for them that an extrapleural thoracoplasty will speed up the convalescence.

In order to be able to advocate thoracoplasty to the extent that I do—namely, that I urge it occasionally in patients who might respond to medical treatment—I must feel that the dangers from thoracoplasty are minimal, that the inconvenience to the patient is comparatively slight, and that the final results are good. This opinion is based upon the results which I myself have seen. I will attempt to describe briefly a few points in our technique which may be responsible for our gratifying results.

For the last several years, I have been performing the majority of cases under ethylene anesthesia. Under local anesthesia, as advocated by a large number if not the majority of writers, the operation of artificial thoracoplasty is an ordeal for the patient. A light ethylene anesthesia does not increase the risk of the operation appreciably and it does decrease the discomfort immensely. In my experience, those patients who have had ethylene have gotten along better than those who have had local or spinal anesthesia. If ethylene anesthesia is contraindicated for some reason, I prefer spinal as a second choice. The eight patients who have been operated on under spinal have gotten along splendidly with it.

The great majority of complete thoracoplasties I do in two stages and only two. Each additional stage is an additional source of discomfort to the patient, and if the thoracoplasty can be performed safely in two stages, it is improper to prolong the procedure to three or four. There are certain patients, of course, in whom more than two stages will be required. I have one patient who is now well in whom eight operations were necessary to finally complete the thoracoplasty.

Speed in operation is a very important factor in eliminating the dangers. Occasionally on previous occasions when I have said this, someone in the discussion has remarked that they would prefer a prolonged, careful operation to a short, careless one. I agree with this entirely. However, I prefer a short, rapid, careful operation to a prolonged operation which may not of necessity be any more careful than the procedure which I adopt. With a well-trained team and an average amount of surgical skill, there is no reason why it should take the operator longer than thirty-five minutes to remove any six ribs. The second stage should be done more quickly. There is no reason why, in performing an operation within these time limits, there should be the slightest sacrifice of care, gentleness, and of complete hemostasis. There is no question in my mind that my success with the two stage operation has to a great extent been due to the speed with which the operations have been performed.

The operative mortality of thoracoplasty in well selected cases is practically negligible; certainly less than the mortality from such common abdominal operations as cholecystectomy, gastrectomy, etc. The convalescence from the operation is no more unpleasant than the convalescence from these same abdominal operations.

The deformity, which most prospective subjects for thoracoplasty seem to dread above all else, is practically nil. As long as patients are not members of a nudist colony but dress according to the customs of the land, no one, not even their personal friends, will be able to tell by looking at them which side was collapsed. This does not seem strange when we realize that our coats, blouses, and shirtwaists hang from our shoulders and that the position of the shoulder girdle is in no way affected by the removal of sections of ribs.

Finally, there is no question in my mind that the gratifying results before alluded to are due in a very great measure to the fact that every patient who has had a thoracoplasty has returned to the sanitarium for a continuation

of the sanitarium regime. The minimum length of time for the postoperative sanitarium regime is from three to six months and in many cases longer. I know of no better way of bringing thoracoplasty into disrepute than to return the patients directly to industry instead of sending them back to a sanitarium. I operate upon no patient for thoracoplasty without the definite understanding that that patient, even though his sputum may be negative by the time he is ready to leave the hospital, will return to a sanitarium for a minimum period of at least three to six months.

Statistics at present mean very little. The statistics by no manner of means tell the whole story. They vary not only according to the class of patients from which the surgeon draws his material and to the skill of the surgeon but also to a great extent to the kindness of the operator's heart. A hard hearted surgeon who will select his patients with great care should have over 75 per cent. of them returned to industry. On the other hand, a more tender hearted surgeon who feels loath to deprive a patient of a possible chance, and who will admit for operation those in whom the prognosis is unfavorable, will have his kind heartedness repaid by the gratification of knowing that he has restored to normal life a certain number of patients otherwise doomed, but at the expense of the statistical results he will be able to publish. Archibald, at the meeting of the American College of Surgeons in Chicago a few years ago, in quoting his statistics, divided his patients into three groups—those in whom before operation the prognosis was excellent; those in whom the prognosis was doubtful; and those in whom the prognosis was poor. This is a fair way of doing it and fine for individual classifications, but not accurate enough for the purposes for which statistics are usually used.

Roughly speaking, 40 per cent. of the patients on whom I have operated are back in industry; 40 per cent. are in sanitariums and 20 per cent. are dead. The operative mortality has been about 1 per cent. Of the 20 per cent. dead, some died within a few weeks after operation and some within a few years. Of the 40 per cent. back in industry, it is possible that some of these may shift into the sanitarium group or some may even succumb to tuberculosis. We have had the experience of seeing patients who have been working for many years and have been apparently cured, suddenly have a flare-up of the old tuberculosis (usually as a result of some intercurrent pulmonary infection) which may be very apt to lead to death. Of the 40 per cent. in a sanitarium, many I hope will soon be able to be discharged into industry, increasing the percentage in that group. At present we are attempting to arrive at statistics by classifying our cases before operation into three groups, somewhat as Achibald described, by basing our groupings upon our preoperative impression as to whether the prognosis is good, bad or indifferent.

The second insinuation which the title, "Thoracoplasty as the Procedure of Choice After Sanitarium Treatment Has Failed" is, that thoracoplasty (and by this undoubtedly is meant the extrapleural thoracoplasty after the manner of Sauerbruch) is the only operation at our command. This is not true. There are several other procedures which the surgeon has at his call. The operation of selective collapse or selective thoracoplasty has a tremendous usefulness and I think within a few years, and especially as surgeons get the patients earlier, the complete collapse of an entire side will be infrequent as compared to the collapse of that portion of the lung particularly involved. Selective collapse of a basal lesion may perhaps be obtained by phrenicectomy. A collapse of an apex of the lung may be obtained by thoracoplasty of the upper portion of the chest without interfering with collapse of the base. Cases have now been reported of selective collapse of both apexes and as these are done more frequently and with good judgment, we will probably find the results of this procedure extremely gratifying.

Selective or focal collapse may in certain instances be obtained by use of localized pressure either with paraffin fills or rubber bags. Personally the use of rubber bags seems more logical than the paraffin fills. Several years ago, Dr. Howard Lilienthal of New York suggested the incision and drainage of large tuberculous cavities of the lung. I think that this procedure will do much for those patients who are septic and in whom the cavities are readily accessible. Phrenicectomy has a cer-

tain usefulness though there is no question that its value has been tremendously overemphasized. I am using it less and less and now have stopped entirely using it as a routine procedure previous to thoracoplasty. The preservation of the diaphragmatic motion is of tremendous value in the majority of patients in whom a thoracoplasty is to be performed, especially when resection of the upper ribs forms the first stage of the operation.

Summary: I will summarize this discussion with these few paragraphs.

1. Thoracoplasty must not of necessity be reserved until medical treatment has failed. This would mean that a number of patients would come to the surgeon too late to be helped, and that the length of invalidism would be prolonged unnecessarily for others.

2. Thoracoplasty must not be considered apart from the general sanitarium treatment of tuberculosis. It should be recognized as much a part of a routine treatment in certain instances as artificial pneumothorax, graded exercises, or any other of numerous procedures.

3. The conventional extrapleural thoracoplasty is by no means the only method of treatment. Selective collapse will undoubtedly take a very important place in the surgery of tuberculosis.

4. The importance of phrenicectomy has in my opinion been greatly overestimated.

5. When you as phthisiotherapists turn a patient over to the surgeon for any of these operative procedures neither he nor you should consider this as an irrevocable gift but only as a temporary loan. Every patient should return to you after the operation for further sanitarium treatment.

6. In my mind there is no such division in the treatment of tuberculosis as medical or surgical treatment. It only happens that at some stages during the treatment the phthisiotherapist is the more active of the medical attendants, at other times the surgeon.

THE WISE MEN

The wisest men that ever you knew
Have never dreamed it treason
To rest a bit—and jest a bit,
And balance up their reason;
To laugh a bit—and chaff a bit,
And joke a bit in season.

—Laughing Gas.

COLLAPSE THERAPY OF PULMONARY TUBERCULOSIS IN NEW ENGLAND STATES

John B. Hawes II and Moses J. Stone, Boston (*Journal A. M. A.*, June 11, 1932), are of the opinion that tuberculosis and its diagnosis and treatment should be given distinctly more attention in medical schools than is now the case. Every general hospital, large or small, should freely and willingly admit tuberculous patients for study, diagnosis and operative treatment, if necessary. Further, each general hospital should have on its consulting staff at least, which in every case could easily be arranged, someone who could speak and act with authority in such matters. Every tuberculosis hospital and sanatorium should have an x-ray plant or easy access to one and should be otherwise equipped to carry on compression treatment, while, of course, most important of all, the members of its staff should be trained in the selection of cases and in the technic of pneumothorax. Phrenicectomy and thoracoplastic operation of course require the services of a surgeon trained in thoracic surgery. The subject is of such real importance that it should form part of the yearly program of every county and local medical society. The authors have attended many meetings where such matters were discussed, but either they were for a selected group of men engaged in this work or, if for the general medical public, of such a technical and detailed nature as to be practically devoid of interest and value. They feel that the superintendents of tuberculosis hospitals and sanatoriums should not only write and publish articles on this subject but invite and urge the local medical profession to attend meetings where clinical demonstrations could be held and the whole subject of the modern treatment of tuberculosis presented in a simple and practical way.

CONTRARY THERAPEUTIC AND SEX RELATIONSHIP OF SYPHILIS AND TUBERCULOSIS

William F. Petersen and Rudolph Hecht, Chicago (*Journal A. M. A.*, July 9, 1932), point out that the established therapeusis of tuberculosis and of syphilis is antithetical. The alteratives, in which category nonspecific therapy may be included, used in dosages followed by catabolic effects, are effective in syphilis but harmful in tuberculosis. The biologic changes incidental to the female sex cycle have a corresponding contrary effect on these infections. Tuberculosis in the female is more malignant, syphilis generally more benignant, the reasons being found in the enhanced inflammatory reaction of the premenstruum. The sex liability of the tuberculous patient finds clear expression in the mortality curve, while the relative protection of the syphilitic female is demonstrated in the greatly lessened incidence of neurosyphilis. Fundamentally, of course, the difference in the ultimate clinical effect of the identical biologic cycle lies in the ability or disability of the tissues and fluids of the body to dispose of the virus which is disseminated when premenstrual activation of localized lesions takes place.

Correspondence

DR. VAN DERSLICE—A TRIBUTE

Oak Park, Ill., January 10, 1933

To the Editor:

James Warren Van Derslice was a man loved by his close associates. He was a man, through and through. And during an acquaintanceship of over thirty years I never once found him lacking in the fundamentals of high manliness—a great record that for anyone.

Organized medicine, about twenty-five years ago, suffered a rift within itself. One faction was called "highbrow"; the other "lowbrow." And because of the partisanship he showed at that time Dr. Van Derslice was ever after called a "lowbrow."

For the younger generation present I should explain that in the days when this rift occurred organized medicine was not the fine and democratic body that it is today. Rather was it a cabal—a great society ruled by the iron hand of the select few who stood omnipotent, who dictated policies, standards and pursuits. You were ostracized if you deviated from the rules and regulations laid down by this group of autocrats.

From this mighty Mussolini method there developed the "lowbrow" group with "Van" one of its first agitators. The "lowbrows" had their beginnings in the Chicago Medical Society, and later invaded the national organization. Besides Dr. Van Derslice at the outset, and Doctors Nagel, Fowler, Ferguson and Kraft I might mention plenty of others in this brave handful.

They were all of them beaten and knocked down, time and time again. But they always got up. And finally they stayed up, not to be knocked down again. They routed the highbrows completely. Ever since the lowbrows have been in the saddle, but if it had not been for Dr. Van Derslice and his co-workers would that element have ever made so much as a stirrup to the unending harm of medicine?

Year after year I attended conventions with "Van." What I state of his fighting faculties is intimate knowledge, and not hearsay. Fighting for a principle that he felt was right, I have known Van to sit in a caucus all night long. And those experiences I count among the rarest joys of my life.

When we take inventory of what life has given us or denied, of what we have possessed or of what has passed us by, even more than temporary fame or monetary success the thing that in reminiscence seems to have brought us greatest delight is the contact and the friendships with men like James Warren Van Derslice.

His enduring friendships were counted by the thousands. Among his intimates were men of both national and international repute. There were men like Cotton, Billings, Pusey, Cary and Dean Lewis, Mattas of New Orleans, Simmons of San Francisco, Brewer of New York, Martin of Philadelphia, Crile of Cleveland, Moynihan of Leeds and Lane of London, to whom he was always just "Van." Few have had the rare privilege of enjoying the friendship of such men. It is a fine thing to have done so.

Upon many of our own closeknit group he has made an endearing and enduring and potent impression. Not only my humble self will bear witness to this but many others including Dr. Anna E. Blount and hundreds of women physicians as well as Oscar Hawkinson, Frank Needham, Kerr and Scott.

Even though he differed perhaps from them in policy, idea or method, yet deep in his heart and soul he had the utmost respect for their individual opinions, as I have often heard him admit.

With a keen sense of justice and passion for fair dealing, he was either for you or against you. No one ever knew him to be guilty of a small or dirty trick, even to an arch enemy. Nor was there ever any question as to where Dr. Van Derslice stood. He took defeat as philosophically as he did victory, and held no malice afterwards. But you never caught him straddling a fence, with muscles tensed to jump on the winning side. Not Van! Those who knew him best, loved him most. He was a wonderful chap.

His leadership in the Aux Plaines society must be referred to. Ever since the component society decided to have branches, Dr. Van Der-

slice had represented us in the council. Most of the time his advice was right. Which is as much as can be said for any man since none of us is ever 100% perfect. You couldn't expect Van to be the exception. To the young men of the Aux Plaines who are to carry on as we of the old guard drop out from time to time, "Van" has left a priceless heritage. He was for the group first, for himself afterwards.

In the Aux Plaines branch of the Oak Park Physicians club for the past ten years nothing was ever taken up, nor any decisions made, unless "Van" had a finger in the pie. I feel sure that I can say without fear of contradiction that "Van" did a pretty good job. Never was there a member of whom I know anything who was more beloved, or who will be as much missed as James Warren Van Derslice, and this as much as anything else because he possessed the rare quality of dependability. Though we are all touched by "Van's" going yet there is a sunny side to this going while you are yet comparatively young and still in the hey-day of success.

I remember that when I was an undergraduate the venerable Dr. Oscar King in an address to the class remarked "Have an ideal; chart your course, and steer for it. Even if you never reach the goal, you will be all the better men for the trying." That very day I set Dr. Wm. E. Quine as my goal. I have never reached his medical eminence, but I have never ceased trying to emulate in other ways the great and good physician that he was, and I sincerely believe that by his ideals and his integrity that he moulded the character of more medical students than has any other medical man within my knowledge. And Van was like that. I believe that during the last five years Van's leadership of the Aux Plaines society attained a higher pinnacle of success than has ever been reached by any other leader in any other branch of the Chicago Medical Society. I know I speak the sentiments of many physicians when I say that "Van's" life, his works and his part in the medical activities of his colleagues especially in Oak Park has left on our hearts an indelible imprint.

HARRY JOHN STUART.

THE LENS ANTIGEN TREATMENT OF CATARACT

To The Editor: Noting the abstract of an article by Dr. A. E. Davis on The Lens Antigen Treatment of Cataract in the January number of your Journal, it seemed to me that your readers should know how the profession have reacted to Dr. Davis' report. In the first place we all know that many lens opacities remain stationary throughout life. Early senile cataract may remain stationary for many years, and changes of refraction during this time may improve vision considerably.

Ellis (Arch. of Oph. 1928:57 p. 46) reported a series of cases treated by lens antigen compared with the same number of untreated cases and found an equal number in both series which remained stationary. No clearing of opacities was observed in either series. This is what one would expect since there are no theoretical reasons why immunization to lens antigen would cause absorption of only the opaque portions of the lens, leaving the clear lens intact, and Dr. Davis has never claimed to produce absorption of the whole lens.

So far as we can make out, injections of lens antigen simply act as foreign proteins injections, the reaction from which may occasionally be severe, but is incapable of affecting cataract. They affect principally the mental attitude of the suggestible patient and since the course of injections are long and expensive, your correspondent and a number of prominent ophthalmologists with whom he has discussed this subject feel that the method should not be recommended.

SANFORD GIFFORD, M.D.

Kansas City, Mo.

PARENTAGE OR GENES OR ENVIRONMENT

To The Editor: In a Chicago hospital two babies were born just at the same time; both males. They were tagged routinely. Later, it was claimed they had gotten mixed: Thereby adding commercial grist to the day's news, trouble for the hospital, distress for four parents, not to mention embarrassment for the courts and the scientists.

Here was need for a Solomon to untangle the snarl. Why—what difference did it make outside of sentiment? since none could tell the difference!

Science could not tell? It was embarrassing for science!

Then is it all just a gamble—"Heads you win"? Had effort been made by science or the parents to produce a perfect child? "Nine hundred and ninety-nine babies" are just accidental anyway. Were these two boys then just two more babies? If not, what would make one child *right* or better or different? Seed? Whose seed—father's or mother's? Science does not know, and parents cannot know; and, really, parents 999 are not interested until the baby is born—scientifically! *That must* be scientific! —After all desperate effort at prevention.

Suppose parents *were* interested scientifically, sooner, before!—"In the beginning". Interested eugenically in begetting children, instead of accidentally.

Isadora Duncan was reported in the press to have proposed to Bernard Shaw that they mate to produce the brains of a genius in the body of a goddess. To which it is alleged that Shaw replied, "But how can we know? the product might have *my* body and *your brain!*"

Science is baffled, for the time.

Not only is the question of eugenics here involved—though our friends the birthcontrollers do not seem to think the begetting of children in wedlock is ever, or very rarely, more than accidental (What do you think?)—and since we cannot tell whose seed are *right,* whose seed contribute the controlling or dominant influence, nor which seeds bear the dominant hereditary taint of feeble-mindedness, or what have you? And, since Science cannot say what is in the *genes,* or whether the genes or the heredity or the environment causes physical deformity, feeble-mindedness; or, if each individual human being is just unique! Then shall the mother, outside of sentiment, simply take the baby handed her and proceed with the job? Supposed they *are* mixed and that she does not know it? Is there any difference? Many plays and screen pictures show a difference in results! Read Mark Twain's "Puddinhead Wilson". But is there a difference in babies? Experts cannot say. George A. Dorsey asks, in the above mixed babies case, "What did the Chicago experts have to expert on?

The chips! Just the chips. But chips from whose block? Science searches the woodpile.

Solomon says, "Bring the children into court!...Ah!" says he, "this boy has a Hittite nose! Let's see, the father has a nose like mine! The mother's nose is turned up, now, therefore there is, just arrived, a Hittite nose *gene* in the 'woodpile'."

The doctor says the product will be the result of "the embryonic-material nourishment and uterine barrage of modern physiologic warfare". Then too, besides this, who can say in later years what the endocrine hook-up will do for them:—to say "we are the same that our fathers have been" rather than we are what the function or dysfunction of our endocrine glands make us.

The welfare worker says there may be the *genes* of a prize fighter but the dominants of an artist whose environment produces a bent book-keeper, or a radio crooner.

So Solomon wisely adds, "Bring the children back to me when they are home from the University". O mores! O penates!

While the rule of transmission, the laws of certain physical traits (fairly well established) make us, the exceptions, generalities and averages are baffling. And the environmental influence may outweigh and obscure hereditary gifts*! Then shall the mother ask, "Is this my baby?"

Shall we hereafter dream in our philosophies, and eugenicly beget babies, or follow the orthodox natural selection,—or just bring one home? It seems a far cry to the eugenic baby, the elimination of the moron offspring. The sterilization of the criminal unfit seems realized.

HARRY NELSON JENNETT

*Just recently we have been granted by scientists that the general practitioner's contention that there is much in environment is well founded.

MEDICINE VS. SURGERY

To The Editor: Your editorial on the family physician in your issue of September is right along my own line of thought and I am offering a few remarks on the subject as I see it. We older men are dying off pretty rapidly and so cannot step in and fill the breach. The young men are not being educated as family physicians, but rather as specialists, for the specialty is the thing that brings in the coin, you know, and in bigger bunches than does general practice.

Why, I will be hanged if I know, but the specialist is supposed to be a rather superior sort of being and so worthy of greater pay and more homage. The poor cuss who studies medicine these days has to blow in a lot of money before he can earn a cent and because of his rather huge investment he does not see his way to enter general practice, which is such poor pay, you know. We medical men simply eke out sort of an existence at present and all because the dear people have been told that surgery is the "big show" and that drug medication is all taboo, or nearly so.

I agree with all you have written on the subject, but you are not going to get many of your family physicians until some radical changes are made and that in many ways. We must begin teaching the public that surgery is *NOT* the "whole show" and that frequently patients may do better under medical treatment. We must also teach the truth of this to many of our medical men, even some of our older ones who have gone into the specialties and have become of the one track mind type. When we again begin teaching our students something regarding our staple, low priced drugs and bring a lot of them back on our list, then we may look for a return of the family doctor. He cannot come until he knows something about other than the high priced drug specialties, which are offered almost solely because they give a "bigger profit," as the president of one of our leading pharmaceutical concerns said a few years ago. When we again begin learning something of the simples of Galen and other of our forefathers, then will we become fair family physicians.

I happen to be secretary of the staff of our local hospital and so see all the case reports in which death has intervened. I also see the mortality reports and I have not been able to see that treatment is any better or mortality any lower than either were years ago and before we had all this "higher medical education."

GEO. L. SERVOSS, M.D.
Editor & Manager of Medical Insurance.

And why did the bloodhounds give up the hunt for little Eva?

Voice from the rear—They tell me she was anemic. —*Georgia Tech. Yellow Jacket.*

90 PER CENT OF THE DENTAL PROFESSION ENDORSE THE FIRST MINORITY REPORT OF THE COMMITTEE ON MEDICAL CARE.

Dr. G. Walter Dittmar, president of the American Dental Association, has sent us an illuminating communication. Dr. Dittmar's statement confirms an impression that has been in the mind of the Editor for some time, namely, that the dental profession of America has not been stampeded into approving a system of medical care that will ultimately bring about a system of state medicine or the Dole system that that has been discredited in England and European countries. We quote Dr. Dittmar in full:

Chicago, Jan. 25, 1933

To The Editor:

I have just had an opportunity to read your most excellent editorials in the January issue of your journal, "Happy New Year" and "The Majority Report of the Committee on the Costs of Medical Care" etc., plus the many citations from lay editorials. May I congratulate you and compliment you on your most excellent presentation.

May I add that it is my belief that more than 90% of the dental profession of America endorse the First Minority Report in spite of the position taken by the members of the dental profession acting on the committee.

Personally I'm with you 100%. *More power to you!*

G. WALTER DITTMAR.

PREVENTION OF MATERNAL INJURY INCIDENT TO PREGNANCY, FROM STANDPOINT OF THE GENERAL PRACTITIONER

In the prevention of maternal injury incident to pregnancy and labor, P. BROOKE BLAND, Philadelphia (*Journal A. M. A.*, Dec. 3, 1932), discusses some of of the common conditions that may lead to serious injury. They are: in the first trimester, pregnancy not within the uterine cavity, but within the fallopian tube, the premature expulsion of an indwelling uterine pregnancy, and abortion; in the second trimester, hydramnion and hydatidiform mole; in the third trimester, toxemia and rupture of the uterus; injuries incident to labor; mechanical factors; prevention of injuries incident to tubal gestation; injuries incident to abortion; hydatidiform mole; injuries from pregnancy toxemia; rupture of the uterus; injuries of the cervix; injuries of the perineum, and damage from sepsis.

Society Proceedings

COOK COUNTY
CHICAGO MEDICAL SOCIETY

Program—The Handicapped Child, January 11, 1933

The Crippled Child
Anne S. Davis, Director, Vocational & Educational Guidance Bureau, Board of Education, City of Chicago

Behavior Problems of Children
Paul Schroeder, Director, Institute for Juvenile Research.

The Delinquent Child
J. P. Molloy, Jr., Clinical Director, Institute for Juvenile Research.

The Dependent Child
Judge Mary Bartelme, Juvenile Court of Cook County.

Program, Sponsored by Loyola University School of Medicine, Jan. 18, 1933

Basic Factors in Edema and Its Management.....Italo F. Volini

The Ambulatory Treatment of Peptic Ulcer.....Sidney A. Portis

Tuberculous Anal Fistula.....Clement L. Martin

Early Diagnosis of Carcinoma of the Cervix.....Henry Schmitz

General Practitioner's Night, January 25, 1933

Backache from the Standpoint of Interest to the General Practitioner

Backache from the Internist's Standpoint.....Charles S. Williamson

The Urological Aspect of Backache....Vincent O'Conor

Backache Due to Gynecological Pathology .....Edward Allen

Backache from the Orthopedic Standpoint.....Philip H. Kreuscher

Discussion..... LeRoy H. Sloan, J. S. Eisenstaedt, Joseph L. Baer, Fremont Chandler, Philip Lewin

WARREN COUNTY

The January Meeting of the Warren County Medical Society was held at Hawcock's Cafe, Monmouth, Illinois, on Thursday, January 19, 1933. The meeting was arranged to honor the oldest member of the Society, Dr. J. M. McClanahan, of Kirkwood, who has been practicing medicine continuously in Warren County, for fifty-nine years. Physicians who have practiced fifty years or more, were invited as special guests of the Society, and those present, were Dr. H. B. Young, Burlington, Iowa; Dr. F. B. Dorsey, Keokuk, Iowa; Dr. J. E. Camp, Augusta; Dr. J. E. Coleman, Canton; Dr. I. F. Harter, Stronghurst, Dr. E. B. Montgomery, Quincy; and Dr. W. W. Williams, of Quincy. Regrets and best wishes were received from a number who were unable to attend the meeting. Among these, were messages from Dr. John R. Neal, President, Illinois State Medical Society, Springfield; Dr. Rolland L. Green, Peoria; Dr. J. B. Bacon, Macomb; and Dr. T. F. Beveridge, of Muscatine, Iowa.

Following the dinner, Dr. Ralph Graham, President of the Warren County Medical Society, introduced Dr. H. L. Kampen of Monmouth, who talked of his associations with Dr. McClanahan over a period of forty years, relating many interesting experiences enjoyed during the long period. He then introduced Dr. McClanahan who gave an unusually interesting talk, greatly appreciated by all present.

Dr. H. M. Camp was asked to introduce the special guests, and among those so introduced were Ralph McClanahan, Helen McClanahan and Dr. Scott McClanahan, children of J. M. McClanahan, Dr. B. V. McClanahan, Galesburg, a nephew, and Dr. Victor McClanahan of Aledo, a cousin. Each of the invited guests in the fifty year class were introduced, and the official representatives of the Illinois State Medical Society, Dr. Philip H. Kreuscher, President-elect, Chicago; Dr. Chas. D. Center, Chairman of the Council, Quincy; Dr. E. P. Coleman, Councilor of the 4th District, Canton, and Miss Jean McArthur, Secretary of the Educational Committee, Chicago.

Dr. H. L. Kampen then presented Dr. McClanahan with the best wishes of his associates of the Warren County Medical Society, a wrist watch, and a leather book commemorating fifty-nine years of practice, in which each guest was requested to give his name and address, and any personal greeting he desired to make a matter of record.

Following these presentations, the President introduced the speakers on the Scientific Program, Drs. Leo Campbell, and H. A. Oberhelman, Associates in Medicine and Surgery respectively, at Rush Medical College, Chicago. They talked on the Medical and Surgical considerations of Diabetes, in a very clear and interesting manner.

Interesting discussions of these talks were made by Drs. George B. Crow, Burlington, J. C. Reddington, Galesburg, E. P. Coleman, Canton, and others present.

It was interesting to note that approximately twenty-five counties were represented in the guests assembled to honor Dr. McClanahan, a delegation of twelve being present from Quincy. Burlington, Keokuk, and other cities of Eastern Iowa were well represented, and practically every city and town in Central and Western Illinois had a number of representatives, including six from Peoria.

There were more than 100 present at this meeting, although weather conditions prevented many from attending, who otherwise would have been there.

CHARLES P. BLAIR, M.D.
Secretary, Warren County Medical Society.

NUMBER NINE PILLS

Army Surgeon (to his assistant): "Give this chap a No. 9 pill."

Assistant: "We are out of No. 9, sir."

Army Surgeon: "Well give him a 7 and 2 or 5 and 4."

(*From Sergeant Empy's lecture.*)

DECLINE OF THE "WHITE PLAGUE"

Tuberculosis is vanishing in the United States and in another five years it will be classed as a minor disease. So, at any rate, says Dr. Gerald B. Webb of Colorado in a recent speech before a middle western medical association.

Tuberculosis, as Dr. Webb points out, seems to run in cycles of about 100 years, and all indications now point to the belief that the present cycle is on its downward swing.

Modern methods of treating tuberculosis, beyond a doubt, are more effective than those practiced in former generations. Yet it is odd to realize that the prevalence of the disease seems to depend, at least in part, on mysterious forces beyond human control. Just now it is subsiding, but medical science does not pretend to claim all the credit. There is at work, apparently some factor which we cannot yet understand.—*Edwardsville Intelligencer.*

Marriages

Louis F. Kompare, Waukegan, Ill., to Miss Mary Shifrer of Chicago, Nov. 24, 1932.

Frank W. Nickel to Mrs. Helen Artis Davis, both of Peoria, Ill., Dec. 3, 1932.

Dwight A. Pence to Miss Roselyn Pease, both of Decatur, Ill., October 22, 1932.

Personals

Dr. Ernst Pribram spoke on "Metabolism of the Intestinal Flora and Disease" before the McDonagh Society for Clinical Research, January 20.

Dr. Robert H. Herbst, Chicago, addressed the Kankakee Medical Society, January 12, on "Transurethral Electroresection of the Prostate Gland."

Dr. Louis Rudolph, Chicago, spoke on "Management of the Occiput Posterior Position" before the Tri-City Medical Society at La Salle, January 3.

Dr. Olin West, Chicago, discussed the report of the Committee on the Costs of Medical Care before the Sangamon County Medical Society in Springfield, January 19.

Dr. Clayton J. Lundy addressed the Chicago Society of Internal Medicine, January 23, among others, on "Ventricular Extrasystoles Elicited from the Exposed Human Heart."

Dr. Arthur Earl Walker, among others, addressed the Chicago Neurological Society, January 19, on "Attachments of the Dura Mater to the Cranium."

Dr. William S. Middleton, Madison, Wis., addressed the Peoria City Medical Society, January 3, on "Treatment of Lobar Pneumonia."

At a meeting of the McLean County Medical Society, January 10, Dr. Maximilian J. Hubeny, Chicago, spoke on "Hypertrophic Spondylitis Accompanied by Radiculitis."

At a meeting of the La Salle County Medical Society, January 5, Drs. Philip Kreuscher, Chicago and Harold M. Camp, Monmouth, spoke on fractures of the major joints and modern medical problems, respectively.

The Illinois Radiological Society addressed in Jacksonville, January 22, by Drs. Edward L. Jenkinson and Leslie L. Veseen, Chicago, on "Treatment of Lesions of the Prostate" and "Pathological Conditions of the Kidney," respectively.

Dr. Harry Friedenwald, Baltimore, spoke before the Chicago Opthalmological Society, January 6, on "Retinal Vascular Disease, Its Relation to General Vascular Disease, with Special Reference to Hypertension."

Dr. Harrison S. Martland, chief medical examiner for Essex County, New Jersey, will delivery the ninth Ludvig Hektoen Lecture of the Frank Billings Foundation, February 24. His subject will be "Recent Progress in the Medicolegal Field in the United States."

Dr. Arthur Steindler, Iowa City, addressed the Institute of Traumatic Surgery, January 11, on "Disability Following Simple Fracture at the Wrist"; Dr. Hiram Winnett Orr, Lincoln, Neb., "Problems of Chronic Osteomyelitis," and Dr. Fremont A. Chandler, "Lesions of the Isthmus of the Lower Lumbar Vertebrae."

Dr. Anthony Michael Catania, 5258 West Division Street, Chicago, was indicted by the grand jury, Dec. 28, 1932, on the charge of murder by abortion. Dr. Catania was licensed in Illinois in 1930. He was not a member of the Chicago Medical Society.

Speakers before the Chicago Surgical Society, January 6, included Drs. Edward Starr Judd, Rochester, Minn., on surgery of the

biliary tract, and Ralph B. Bettman and Robert S. Baldwin, "Retrograde Jejunal Intussusception."—Dr. George Waldbott, Detroit, addressed the Chicago Society of Allergy, January 16, on "The Allergic Thymic Child."

At a meeting of the Chicago Urological Society, January 26, Dr. William J. Carson, Milwaukee, spoke, among others on, "Supernumerary Kidney."

The St. Clair County Medical Society was addressed in East St. Louis, January 5, by Dr. William H. Olmsted, St. Louis, on "Treatment of Diabetic Arteriosclerosis and Gangrene of Lower Extremities."

The Chicago Gynecological Society was addressed, January 20, by Drs. Louis Rudolph on "Delivery of the Shoulders in Cephalic Presentation; Mechanism and a Modified Method of Delivery," and Joseph B. DeLee, "The Physiology and Conduct of Normal Labor."

Dr. Francis L. Lederer addressed the Decatur Medical Society, January 24, 1933, on the subject "Modern Concepts in the Diagnosis and Treatment of Sinus Conditions," illustrated by lantern slides and motion pictures.

Dr. Bertha VanHoosen addressed the Woman's Club of La Salle, January 9, on "Outwitting Middle Age."

Dr. W. A. Newman Dorland addressed the Physicians' Round Table of Chicago, January 10, on "Shall We Live On?"

Dr. A. C. Ivy presented the subject of "Vivisection" at a meeting of Legislative Chairmen and President of the Clubs belonging to the Illinois Federation of Women's Clubs, January 11.

Dr. Cyril Hale gave a talk on "Mental Health" before the West Suburban Branch of the American Association of University Women in Oak Park, January 11.

Major Joel Connolly, Chief of the Bureau of Sanitary Engineering of the Chicago Board of Health, addressed the Edward Coles School Parent-Teacher Association at the invitation of the Educational Committee, on "Sanitation, Home, School and Community," January 12.

Dr. W. A. Newman Dorland addressed the staff of the Belmont Hospital January 19, on "The Origin of Ovarian Tumors."

Dr. J. R. Ballinger addressed the Physicians' Fellowship Club Auxiliary on January 13.

Dr. Gilbert P. Pond gave a talk on "Mental Health" to the boys of Marcy Center, Chicago, January 19.

Dr. Herbert Rattner addressed the Pre-Medical Pre-Dental Club of Central Y. M. C. A. College, January 20, on "The Skin."

Dr. Lena K. Sadler addressed a joint meeting of Will-Grundy County Medical Society and the Woman's Auxiliary, January 18.

Dr. Gatewood addressed the Academy of Surgery of Detroit, January 12, 1933, on "Carcinoma of the Stomach."

Dr. Alice Conklin addressed the Irving Park Sorosis Club, Chicago, on January 23, "Health of Middle Aged Women."

Dr. Maximilian Kern addressed the Young Married Couples Sunday Evening Club of the Austin Methodist Episcopal Church, January 15, 1933, on "Our Present Knowledge of What 'Glands' Do and What They Do Not Do."

At the annual meeting of the Martha Washington Hospital held January 17 the following officers were elected for the year 1933: Herbert G. Lloyd, president; Dr. Heber M. Goodsmith, vice-president; Beryl B. Collins, treasurer; W. W. Johnstone, secretary; Eugene V. Doron, superintendent.

Dr. Joseph K. Calvin presented a paper on "Some Aspects of Kidney Diseases in Children." at the January 25 meeting of Will-Grundy County Medical Society.

Dr. James G. Carr gave an address on "Treatment of Jaundice" before the DeWitt County Medical Society, January 26.

Dr. M. P. Borovsky addressed the Longwood Mother's Club, January 24 on "Understanding the Adolescent."

Dr. F. O. Fredrickson addressed the Woman's Auxiliary of the Englewood Branch, Chicago Medical Society, January 25.

At a dinner given in his honor at the Drake Hotel, Chicago on Jan. 3rd, 1933, the Honorable Rene Weiller, Consul-General of France, awarded to Dr. Frank Smithies the Cross of Knight of The Legion of Honor of the French Republic in recognition of his achievements with respect Post-Graduate Medical Education in France and in medical science.

News Notes

—H. 72 and S. 146 propose to repeal the present law relating to the regulation of maternity hospitals and to provide for the licensing and supervision of such hospitals by the state department of public health.

—Peoria City Medical Society featured a symposium on fractures, January 17, with Drs. Arthur H. Conley, William Cubbins and James Callihan, all of Cook County Hospital fracture service, as speakers.

—A petition signed by six local medical institutions in opposition to a request for an injunction by the Illinois Anti-Vivisection Society was filed in circuit court, Dec. 28, 1932. The injunction would restrain enforcement of the present ordinance governing the release of animals from the dog pound to medical schools for experimental work in medicine. The institutions signing the petition were University of Chicago, Northwestern University, Loyola University, University of Illinois, Chicago Medical College and Michael Reese Hospital. The petition set forth that if the injunction is granted "a great investment in capital and maintenance will be completely destroyed and the petitioners will be denied one of the greatest means of promoting human welfare known to man." In December, 1931, the city council by an overwhelming majority approved the ordinance authorizing the release of unclaimed dogs to medical schools for humane and scientific purposes.

—At the regular monthly meeting of the Aurora Medical Society held January 5, 1933, the following officers were elected; president, Dr. Imas Rice; vice-president, Dr. R. V. Turner; secretary-treasurer, Dr. C. O. Heimdal (re-elected). The retiring officers for 1932 were, president, Dr. R. H. Graham; vice-president, Dr. C. G. Weller; secretary-treasurer, Dr. C. O. Heimdal.

Deaths

James Gordon Berry, Chicago; Rush Medical College, 1875; a Fellow, A. M. A.; one of the oldest physicians in the city; aged 82; died, January 19, of chronic myocarditis.

M. Arista Bingley, Chicago; University of Illinois College of Medicine, 1898; a Fellow, A. M. A.; aged 79; was killed, January 24, by an automobile, when crossing a highway in Edison Park.

Arthur Le Roy Blunt, Chicago; Bennett College of Electric Medicine and Surgery, Chicago, 1888; aged 76; died, Nov. 7, 1932, of myocarditis.

Bernhard Erp Brockhausen, Freeport, Ill.; Humboldt Medical College, St. Louis, 1869; aged 87; died, January 12.

William Christie, Chicago; McGill University Faculty of Medicine, Montreal, Que., Canada, 1887; aged 70; on the staff of the Woodlawn Hospital, where he died, January 3, of cerebral hemorrhage.

John F. Fair, Freeport, Ill.; New York University Medical College, 1881; and Jefferson Medical College, 1885; aged 77; died, January 2, after a long sickness.

Francis Front, Chicago; University of Krakow, Austria, 1894; aged 65, died, Dec. 7, 1932, in Daytona Beach, Fla.

John Hamilton Gray, Morrison, Ill.; Hahnemann Medical College and Hospital, Chicago, 1883; aged 75; died, January 12, of influenza and pneumonia.

Grant Irwin, Quincy, Ill.; Chaddock School of Medicine, Quincy, 1886; a Fellow, A. M. A.; president of Central States Industrial Surgeons Association; aged 67; died suddenly in his office, January 12.

John Francis Macnamara, Chicago; Loyola University School of Medicine, 1921; a Fellow, A. M. A.; on staff of German Deaconess Hospital; aged 65; died, January 6, of carcinoma of liver and gall bladder.

Augustus W. Mercer, Chicago; Western Reserve University School of Medicine, Cleveland, 1901; aged 65; died, January 2, of coronary sclerosis.

Thomas D. Palmer, Chicago; Northwestern University School of Medicine, 1867; aged 86; died, January 16, of carcinoma of the prostate.

George Elwood Pumphrey, Carthage, Ill.; Keokuk Medical College, 1897; a member of Illinois State Medical Society; aged 66; died, January 1, of pneumonia.

Marvin S. Rice, Aurora, Ill.; Hahnemann Medical College and Hospital, Chicago, 1876; aged 81; died, January 18, suddenly, in his office.

Charles A. Stevens, Chicago, Northwestern University Medical School, 1899; a Fellow, A. M. A.; on the staff of German Deaconess Hospital; a captain in U. S. Medical Corps, twice promoted, he retired in May, 1919, as a lieutenant colonel; aged 61; died, January 3, of cerebral thrombosis.

James Jay Weltman, Chicago; Northwestern University Medical School, Chicago, 1923; member of the Illinois State Medical Society; formerly instructor in physical diagnosis at his alma mater; School health officer, Chicago Health Department; at one time on the staff of the Municipal Tuberculosis Sanitarium; aged 36; died January 3, of pneumonia and cerebral edema.

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